

Council of the County Palatine of Durham.

SUMMARY

OF THE

ANNUAL REPORTS

OF THE

MEDICAL OFFICERS OF HEALTH,

TOGETHER WITH A

REPORT ON THE VITAL STATISTICS AND

SANITARY CONDITION OF THE ADMINISTRATIVE COUNTY,

FOR THE YEAR 1893,

BY

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THE COUNCIL OF THE COUNTY PALATINE OF DURHAM.

To the Chairman and Members of the
Health Committee.

GENTLEMEN,

I beg to submit to you my Annual Report on the Health and Sanitary Condition of the Administrative County during the year 1893. As in previous years the report contains a summary of the health report of every district Medical Officer of Health, and in each summary I have endeavoured to include all matters of public health interest or which should receive the attention of the Local Sanitary Authority. I have again included in the report a short review of the vital statistics, of the prevalence of infectious disease, and of the general sanitary condition of the Administrative County as a whole, and I have also been able to add a table (with two charts) shewing the number of births, deaths, and deaths from zymotic diseases during each month of the year. This table which is compiled from the monthly returns of deaths, is, I think, a most valuable one, and is, moreover, the first table of its kind for so large a district.

Annual health reports were this year forwarded from every district in the county, which is ground for congratulation, as in no previous year has a complete set of reports been received by the Council. It is also satisfactory to note that most of the reports were sent

in as soon after the end of the year as possible, for with one or two exceptions they were, although mostly printed, received by me before the middle of March. The earlier a report of this kind is published the more valuable it undoubtedly is, and I have to thank the Medical Officers of Health for completing their reports with so little delay, and thereby enabling me to publish this summary within a reasonable time.

The improvement in the reports for the year 1892 as compared with previous years was undoubtedly maintained in those of last year. Many of the reports are prepared with great care and contain much valuable information obtained as the result of close observation, but on the other hand, a few of the reports are by no means detailed enough, and do not refer to matters of sanitary importance in the districts with which they deal. The chief defect in the reports as a whole, and one which causes considerable trouble in summarizing, is the want of uniformity in the calculation and arrangement of the vital statistics. In some of the reports the chief vital statistics are set forth separately at the commencement, and it would be a great improvement and more easy of reference if this example were generally followed. In the calculation of the zymotic death-rate there is also a great want of uniformity, for in some reports deaths from Erysipelas and Puerperal Fever are included in that rate, though they are not so included in the Registrar General's returns, while on the other hand deaths from Diarrhœa are in some reports excluded, though they should undoubtedly be

included in the zymotic death-rate. In the summaries of the reports these mistakes have been corrected, but in making such corrections a great deal of time is unfortunately taken up.

Of the 52 annual reports 44 were printed. Two reports (Sedgefield and Teesdale, Middleton Division), which were previously in manuscript, were this year printed, but the reports of the Medical Officers of the following districts were again in manuscript :—

URBAN.

Blaydon.	Southwick.
Houghton-le-Spring.	Whickham.
Ryton.	

RURAL.

Houghton-le-Spring (2 reports).	Teesdale (Staindrop Division).
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Unless the reports are printed they can receive little or no publicity, and as a result matters of sanitary importance are frequently overlooked or forgotten by both sanitary authorities and the general public. The expense of printing a report is very small, and it would be a great advantage if in future the above-named Sanitary Authorities would direct that their Medical Officer's annual health report be printed.

Much sanitary progress has been made in the county during the year under review, and judging from the annual reports and from my own personal inspections there can be no doubt that more important work, having for its end the improvement of the public

health, has been effected or set on foot during 1893 than during any previous year. In a few districts little effort appears to have been made to remedy sanitary defects, which are a discredit to the local authority and a standing menace to the public health, and in many others there is ample scope for the exercise of the powers of the sanitary authority, but it is satisfactory to note that for the most part sanitary authorities throughout the county as well as the general public are now recognising the fact that the health of a district is dependent on its sanitary condition. In many districts works for the improvement of the water supply, drainage, and sewerage are being executed, while active measures have been taken for the improvement of the houses of the working classes, and for the prevention of the spread of infectious diseases.

Many of the sanitary improvements in the county have undoubtedly resulted from the action taken by the County Health Committee, whose efforts to obtain for the towns and villages those essentials of good health—pure air, pure water, and good food—have however, to a great extent, been supported by the local sanitary authorities.

Although there has been a distinct improvement in the sanitary condition of the county during the past few years, the standard of health during 1893, based on the vital statistics, was more unfavourable than for several years past, especially with regard to the zymotic and infant mortality-rates.

The increased mortality during the past year, though undoubtedly the result to a large extent of the existence of insanitary conditions, as shown by the large number of deaths from the "preventible" diseases, Typhoid Fever and Diarrhœa, was however mostly excited by the climatic conditions which obtained during the summer, the great heat favouring rapid decomposition, while owing to the drought sewers were badly flushed, and in some places impure drinking water was resorted to owing to the failure or bad quality of the proper supply. Influenza, which was prevalent both during the early months and towards the end of the year, also adversely affected the death-rate, both directly, and indirectly by increasing the mortality from acute lung diseases. The fact however, that the death-rate from Enteric Fever and Diarrhœa, the two diseases most intimately connected with insanitary environment, should have been more than twice as high as for the whole of England and Wales, although the whole country was subjected to the same climatic conditions, is strong evidence that the sanitary state of the administrative county is not yet satisfactory, and no efforts should be spared to remove those conditions which are largely responsible for the prevalence of preventible disease, and which have the effect of lowering its public health below that of the rest of the country.

Sanitary Districts and Administration.

During 1893 no alteration has taken place either in the number or the area of the sanitary districts

of the county, but towards the end of the year a petition was presented to the County Council asking that the Spennymoor Urban District should be enlarged by the inclusion in it of Tudhoe Grange and other portions of surrounding rural districts. A *prima facie* case in favour of the petition having been made out, a committee was appointed by the County Council to hold an enquiry as to whether the request of the petition should be granted. The new Local Government Act (1894) will undoubtedly alter the area and boundaries of several sanitary districts.

The number of sanitary districts in the county is 42, viz. :—26 urban, 14 rural, and 2 port; but for administrative purposes several of the rural districts are divided into two or more sanitary districts. The sanitary officials of the administrative county number 94, and include 43 Medical Officers of Health, several of whom act in that capacity for more than one sanitary district, 42 Sanitary Inspectors, and 9 Assistant Inspectors. Half of the salary of the Medical Officers of Health of 33 districts, and also of the Inspectors of Nuisances of 36 districts is repaid to the Sanitary Authorities by the County Council.

There have been a number of changes in the sanitary officials of the county during the past year. Among the Medical Officers of Health the deaths have occurred of Dr. Hood, of Tow Law, and Dr. Allen, of Willington, and the vacancies have been filled by Dr. Wild and Dr. R. E. Brown, while owing to resignations, Drs. Nicoll, Gray, Armstrong, Beattie, and

Livingstone have been appointed Medical Officers of Health of Jarrow, Stanhope, and the South Shields, Staindrop and Stanhope rural districts respectively. Among the Sanitary Inspectors changes have occurred at Hartlepool, Hebburn, and Spennymoor, and in the Chester-le-Street and Hartlepool rural districts.

Population.

The estimated population of the Administrative County at mid-year, 1893, is 744,149, an increase of 10,204, when compared with the estimated population of 1892. The population of the urban districts is estimated at 388,991, and of the rural districts at 355,158.

Births.

The number of births registered was 27,458 or 346 more than in 1892. Of these 13,835 were in the urban, and 13,623 in the rural districts; the birth-rate for the former being equal to a rate of 35·5 per 1,000, for the latter 38·3, and for the whole administrative county, 36·8. In the six boroughs the rate was only 33·9. The birth-rate in England and Wales for 1893 was 30·8 per 1,000, which, as in previous years, is very much below that of this county. The birth-rate exceeded 40 per 1,000 in the following districts, :—Felling (40·4); Seaham Harbour (44·1); Chester-le-Street Rural (40·4); Houghton Rural, Southern Division (40·5); Easington Rural (40·7); and Sunderland Rural (41·1). The lowest rates were 25·4 in Durham City, 18·0 in Teesdale (Barnard Castle Division), and 21·9 in Weardale (St. John's Division).

Deaths.

There was a large increase in the number of deaths when compared with the previous year, 14,924 or 1,354 more than in 1892 being recorded. In the urban districts there were 7,624 deaths, equal to an annual mortality rate of 19·5 per 1,000 population, and in the rural districts 7,300 deaths with a death-rate of 20·5 per 1,000. The county death-rate was 20·0 per 1,000, which exceeds by 0·8 the rate for England and Wales, and is 1·6 higher than in 1892. The highest death-rates were in Shildon (26·2), Houghton-le-Spring (25·1), and Felling (23·4) among the urban, and in Houghton (22·8), Sunderland (22·8), and Easington (22·4), of the rural districts. The districts with the lowest rates were Ryton (16·3), Whickham (16·4), and Brandon (16·8), and the rural districts of Weardale, Derwent Division (3·8); Teesdale, Barnard Castle Division (13·0); Stockton (14·1); and Darlington (14·7). In the six boroughs the death-rate was only 18·7 per 1,000, or 1·3 less than the county death-rate, which is probably owing to the fact that their sanitary condition is better and the sanitary administration more efficient than in many of the small towns and rural districts. The increase in the death-rate during 1893 was mostly due to the large number of deaths from zymotic diseases and to some extent to the prevalence of Influenza, which was indirectly responsible for many deaths, especially among those past the prime of life.

In several districts the percentage of un-certified deaths to total deaths was very high, and the

percentage for the whole county (4·6) was very much in excess of that for England and Wales (2·7). In the six boroughs it was only 1·7, but in the other urban districts it was 5·3, and in the rural districts 5·7. The largest proportion of uncertified deaths was in Spennymoor (22·3 per cent.); Durham Rural, Western Division (21·1); Blaydon (17·7); and Houghton Rural, Southern Division (17·0); while it was also very high in Bishop Auckland, Seaham Harbour, and the Auckland and Chester-le-Street rural districts. These uncertified deaths are almost entirely owing to medical practice by unqualified persons, several of whom have had no medical training of any kind. An analysis of the uncertified deaths in the county during 1893 shows that the mortality among young children is extremely high, 72·5 per cent. of these deaths being those of children under 5 years of age, while for the whole county the deaths at those ages were only 46·9 per cent. of the total deaths. There can be no doubt that much harm and apparently serious loss of life results from this medical practice by untrained and unqualified persons.

Infant Mortality.

The number of deaths of children under 1 year of age was very high, being at the rate of 170 per 1,000 births registered, as compared with 154 in the previous year, and 159 for England and Wales. There were 509 more deaths in the administrative county at this age period than in 1892, and this increase was almost entirely due to the hot summer weather which

had the effect of enormously increasing the mortality from summer or infantile Diarrhoea.

The rate was 172 in the urban and 169 in the rural districts, but in the boroughs it was only 163. The sanitary districts with the highest infant mortality-rates were Houghton-le-Spring (252), Shildon (239), Benfieldside (235), Willington (221), Houghton Rural (206), and Stanley and Durham Rural, East Division (200), while in 1892 the highest rate was only 186. In none of the urban districts was the rate below 100, but it was only 93 in Weardale (St. John's) and the Medomsley division of Lanchester, 94 in Weardale (Wolsingham division), and 99 in the Stockton rural district.

There can be no doubt that much of the mortality among young children is preventible, the chief causes of this "massacre of the innocents" as it has been fitly called, being insanitary surroundings, improper food, and maternal neglect. In the reports of West Hartlepool and Tow Law, special reference is made to the causes of the infant mortality, and in the latter place the large number of deaths among young children is attributed to the bad quality of the milk, the result of the insanitary condition of the cow-byres. The action of the Technical Education Committee in instituting lectures on Elementary Hygiene throughout the county should have the effect of reducing the infant mortality, especially where it results from improper feeding and maternal ignorance. From the table at the end of this report it will be seen that during the hot dry

weather of the third quarter of the year the deaths under one year of age were nearly double the number in any other quarter.

Zymotic Diseases.

There was a very great increase, compared with 1892, in the number of deaths from the seven chief zymotic diseases, viz., 2,554 as against 1,719, or an increase of 835. From the tables and charts at the end of this report it will be seen that the increase was almost entirely the result of the great mortality from Enteric Fever and Diarrhœa. It will also be noticed that nearly half the zymotic deaths occurred during the third quarter of the year, the largest number of deaths from these diseases being registered in August (462). As will be seen from the subjoined table the county zymotic-rate (3·4 per 1,000) compares very unfavourably with that of England and Wales (2·4), but in the six boroughs the rate was only 3·0 per 1,000, and therefore much below the rate of the rest of the county. By far the highest rate (8·3) was in the Shildon urban district, but the rate was also very high in Houghton (6·1), Jarrow (5·2), and the South Shields rural district (5·1), while in 10 other districts the rate exceeded 4·0 per 1,000, viz., in Tow Law, Brandon, Southwick, Bishop Auckland, Blaydon, West Hartlepool, and the rural districts of Easington, Chester-le-Street, Hartlepool, and Houghton (Southern Division). The lowest zymotic-rates were in Stanhope (1·0), Durham (1·2), and in the rural districts of Teesdale and Weardale (1·0), and Darlington (1·4).

		Urban Districts.	Rural Districts.	Administrative County.	England and Wales.
Birth-rate	.. ..	35·5	38·3	36·8	30·8
Death-rate	.. ..	19·5	20·5	20·0	19·2
Zymotic-rate	.. ..	3·4	3·4	3·4	2·47
Infant Mortality-rate	..	172	169	170	159
Small-pox	.. ..	0·06	0·03	0·05	0·04
Scarlet Fever	.. ..	0·17	0·26	0·21	0·23
Diphtheria and Mem- branous Croup	..	0·27	0·37	0·32	0·29
“Fever,” (Enteric, Con- tinued, and Typhus)		0·55	0·71	0·63	0·23
Measles	.. ..	0·43	0·32	0·38	0·36
Whooping Cough	..	0·46	0·2	0·34	0·32
Diarrhoea	.. ..	1·45	1·52	1·48	0·96

Small-pox.

Towards the end of 1892, several cases of this disease were reported in the county, and during the early part of last year its prevalence greatly increased, and it appeared likely to assume serious proportions in several places, notably in Durham City and the Chester-le-Street and Easington Unions. Later in the year serious outbreaks occurred in the Blaydon district (April), Jarrow (May), and Leadgate (November). The precautionary measures adopted were however fortunately successful in preventing the disease becoming epidemic except at Blaydon, where at the

time of the outbreak there was neither compulsory notification of infectious diseases nor any isolation hospital accommodation. In this district there were during the year 60 cases and 10 deaths from Smallpox, and owing to the want of proper precautionary measures the disease was introduced from there into several of the surrounding districts. The number of cases of Small-pox reported during the year in the administrative county was 287 (34 deaths), giving a case mortality of 11·8 per cent. There were also 99 cases reported in the county boroughs of Sunderland, Gateshead, and South Shields.

In no month of the year was the county free from Small-pox, the number of cases varying from 3 in September to 73 in May and 59 in January. Many of the reports point out the great value of vaccination in preventing and mitigating the severity of the disease, and although a large number of districts were infected, its general non-epidemic prevalence is probably to be accounted for by the fact that in the past vaccination has been fairly efficient in most districts. The disease was first introduced into the county by a tramp from Yorkshire, and in nearly every instance appears to have been spread by this class of the community. A good deal has been said, and steps are being taken with the view of restricting or supervising the movements of tramps so that they may be prevented from spreading infectious disease, and though the difficulties in the way of doing so are very great, there can be no doubt that the unrestrained

wanderings of this class of persons throughout the country has been the chief means in disseminating Small-pox, and possibly other infectious diseases.

Scarlet Fever.

As in previous years, this disease was again very prevalent in many districts in the county, particularly in Jarrow, Brandon, Houghton, and in the rural districts of Chester-le-Street, Easington, Houghton, and Lanchester. The number of cases reported during the year was 3,814, with 163 deaths, or a case mortality of 4·2 per cent. The disease caused 34 more deaths than in 1892, and was much more prevalent, especially in the last quarter. The death-rate per 1,000 population last year was 0·21, as against 0·17 in 1892, and 0·23 for England and Wales.

Owing to the prevalence of this disease at Lanchester, the schools were closed for a month ; and the continued prevalence of the disease in that district is attributed by the Medical Officer of Health to the want of a proper Isolation Hospital, while in the Houghton district it is said to be caused by the carelessness and utter indifference of the parents to the disease.

There can be no doubt that in the great majority of the houses of the working classes proper isolation for infectious cases cannot be procured, and well constructed and efficiently managed hospitals for such cases should be provided for the use of every sanitary district, but on the other hand the remarks of the Medical Officers of Health of Houghton-le-Spring and the Sunderland rural district are undoubtedly

correct in many districts, and parents not only do not avail themselves of the means provided by sanitary authorities for preventing the spread of such diseases as Scarlet Fever and Diphtheria, but are frequently guilty of the grossest carelessness and negligence with regard to them. The fatalism which exists in this county with regard to most of the infectious diseases, and which frequently results in neighbours with their young children visiting infected houses can, I am afraid, only be stamped out by instructing children at school in the laws of health, and impressing on them the importance of precautionary measures with regard to these and other infectious diseases.

Diphtheria and Membranous Croup.

There were 239 deaths from these diseases, or 22 less than in 1892, and the rate per 1,000 population was 0·32 per 1,000, which though slightly lower than in the previous year is still very high. In England and Wales the rate was 0·29. The death rate from these diseases exceeded 1·0 per 1,000 in Spennymoor, Tow Law and Shildon, while the rate was also very high in Jarrow, Blaydon, and in the Auckland, Easington, and Lanchester rural districts. The number of cases coming to the knowledge of Medical Officers of Health during the year was 647, which would give a case mortality of 36·9 per cent. but this figure is undoubtedly too high, as in districts where there is not notification cases are frequently not returned, while even when the diseases are notifiable cases are sometimes not reported, for in the Lanchester division of the Lanchester

rural district there were only 6 cases notified, and yet there were 9 deaths registered.

The etiology of these diseases (probably Diphtheria and Membranous Croup are the same disease) is by no means thoroughly understood. Defective drainage, especially untrapped house drains, and damp, ill-ventilated houses are frequently conditions associated with the early cases of an outbreak, and wherever Diphtheria has become prevalent I have invariably found it to have been very greatly spread by school attendance and to some extent by promiscuous visiting at infected houses. While enquiring at houses from which cases of undoubted Diphtheria have been notified, I have on several occasions been informed by the parents that other children in the family had been poorly with "bad throats," but that they were never ill enough to be kept away from school. These cases of sore throats are undoubtedly of a Diphtheritic nature and capable of infecting other persons with Diphtheria of a severe type, so that it is easy to understand how that disease is spread by the medium of schools. At Byers Green in the Auckland rural district, Herrington in the Houghton rural district, East Castle in the Lanchester rural district, and Wingate in the Easington rural district, in all of which places there have been within the last two years epidemics of Diphtheria, the disease was chiefly spread by school attendance. Also at Leadgate and Hebburn during the past year, the spread of Diphtheria is attributed by the Medical Officers of Health to school attendance.

An outbreak of Diphtheria at Wolviston in the Stockton rural district was attributed to the transmission of the disease from fowls suffering from gapes.

Typhus Fever.

Of the 16 deaths from this disease, 9 were in Southwick, and 5 in the Easington Rural District (New Seaham). It appears to have been introduced into Southwick from Sunderland, and to New Seaham from Southwick. At Southwick the disease apparently spread owing to the cases not being speedily reported and removed to hospital, while at New Seaham the first cases were probably mistaken for Enteric Fever, and immediate isolation was therefore not insisted upon.

Enteric or Typhoid Fever.

The past year was chiefly remarkable for the extreme prevalence of this disease in very many of the sanitary districts of the county. The number of deaths during the year was 447, equal to a death-rate of 0·60 per 1,000, against 131 deaths in 1892, with a rate of 0·19 per 1,000, or less than a third that for the year under review. In England and Wales, the death-rate from Enteric Fever, though higher than for several years past, was only 0·21 per 1,000, or a little more than a third the rate for this county. As showing the high mortality from the disease, it may be noted that in both the third and fourth quarters of 1893, the number of deaths greatly exceeded the total for the whole of 1892.

The following table gives the number of cases

of Enteric Fever reported to the District Medical Officers of Health, the number of deaths, the case mortality, and the death-rate during each of the months of 1893 :—

Enteric Fever in Administrative County.

			NO. OF CASES.	NO. OF DEATHS.	CASE MORTALITY PER CENT.	RATE PER 1,000 POPULATION PER ANNUM.
January	..	..	109	21	19·2	0·33
February	..	..	82	15	18·2	0·26
March	..	..	60	6	10·0	0·09
April	..	..	60	13	21·6	0·21
May	..	..	50	12	24·0	0·18
June	..	..	50	10	20·0	0·16
July	..	..	124	21	16·9	0·30
August	..	..	213	33	15·4	0·52
September	..	..	797	84	10·5	1·37
October	..	..	672	114	16·9	1·80
November	..	..	345	75	21·7	1·22
December	..	..	212	43	20·2	0·68
1893	..		2674	447*	16·7	0·60

* This number does not agree with the total obtained by adding together the deaths from Enteric Fever (432) given in Table A. I. and B. I. The above number is obtained from the monthly returns supplied to the County Medical Officer from the Registrars, while Tables A. I. and B. I. are compiled from the reports of the District Medical Officers of Health.

from which it will be seen that the disease began to increase in July and reached its maximum in September as regards prevalence, and in October as to mortality.

Although Enteric Fever was so prevalent in the County, its incidence and mortality were especially severe in the following districts, the death rate per 1,000 population from the disease being in Shildon, 3·9; Bishop Auckland, 1·6; and Houghton (Northern Division), 1·6; while it exceeded 1·0 per 1,000 in Houghton-le-Spring, Southwick and in the Easington rural district. The only sanitary district in which no death from Enteric Fever was registered during 1893 was Stanley (urban).

As to the causes of the widespread prevalence of the disease, there can be no doubt that the chief predisposing cause was the seasonal conditions of last year, which were extremely favourable for its development, the great heat promoting rapid decomposition while the extremely dry weather seriously affected the water supplies in many districts, and also prevented the proper flushing of sewers and drains. Various explanations of the actual cause of the disease are however given by the district Medical Officers of Health. Thus at Bishop Auckland and Chester-le-Street, it was probably due to the drinking of water which was unquestionably polluted by sewage from Typhoid infected houses, while at Stockton, Blaydon, West Hartlepool, and in the rural districts of Easington, (South Hetton), Chester-le-Street, Hartlepool, and South Shields, (Marsden Colliery), there appears to have been a relation between outbreaks of Enteric Fever and the drinking of polluted water. At Shildon, the severe epidemic appears to have been to some extent the

result of specific contamination of a milk supply though probably its prevalence in that town was chiefly connected with defects of drainage, sewerage and privy accommodation.

In the Northern Division of the Houghton rural district the outbreak was partly attributed to the opening out of some old sewers, while at Felling, Crook, and in the Houghton rural district (Southern Division), it probably resulted from the want of trapping of the drains.

At Southwick, the prevalence of this disease is accounted for by the pollution of the subsoil by leakage from filthy midden-privies, while it is also attributed to these conveniences at Hebburn, Houghton, and in the Sunderland rural district, while in the Easington and Houghton rural districts it was noted that the disease was most prevalent in houses with enclosed yards and where the midden-privies were in close proximity to the houses.

In the Northern Division of the Houghton rural district, Enteric Fever outbreaks at Penshaw and Warden Law were undoubtedly the result of the importation of infected town manure from Sunderland. In the Sunderland rural district, the possibility of the disease being spread by the practice of storing drinking water for the day in the small pit cottages is mentioned, while at Darlington the epidemic of Enteric Fever is attributed to infected dust being blown and carried by flies into the houses and on to the food.

But in many villages where Enteric Fever was

very prevalent the sanitary circumstances were very fair, and no suspicion could with certainty be attached to either the milk, or water supply, or drainage. I investigated several outbreaks of this description and was forced to the conclusion that the methods of excrement disposal and removal employed were the most probable cause of the disease. Whatever the cause of the first case of Enteric Fever in such places—whether by introduction from another district, or by an ordinarily innocuous organism assuming under favourable conditions the pathogenic properties of the Typhoid bacillus, or by any other means—it is highly probable that the excreta of such patient are at first thrown into the ashpit without disinfection. The contents of an ordinary midden privy are favourable for the existence and development of the Typhoid bacillus, but it is during the time that the middens are being emptied that it seems to me the germs of the disease are most likely to be disseminated.

In most of the houses of the working classes in this county, the midden-privies are situated within a few yards of the back doors and pantry windows, and their contents are, at any rate in the colliery villages, almost invariably removed during the day when both the back door and the pantry window will, especially in hot weather, often be open, and when food will be lying about. The dust created by the emptying of a large midden either directly into the scavengers cart, or first on to the ground and then into the cart is very great, and if there is any wind much of this dust, carrying

infected matter (if infected excreta have been thrown into the ashpit) is as I have frequently seen carried into the nearest houses, and must settle on the furniture, food, etc., which may then become infected. Frequently also in the colliery villages the scavenger's open carts carrying the contents of several middens have to pass along the street within a few feet of the doors of the houses, and the light dust from these is also often blown into the houses.

According to experiments by Uffelmann (Brit. Med. Journal, May 5th, 1894), the Typhoid bacilli retain their power of development in house and street sweepings for at least 30 days in a dry air, and for a longer time in a moister atmosphere (such as a midden), and his experiments also establish that the bacilli are carried into the air with dust from floors, streets, and clothing, and are thus enabled to infect milk and other food. Uffelmann's experiments therefore confirm my deductions as to the spread of Enteric Fever by the agency of midden-privies, and while there is no doubt that that disease is very frequently water-borne, I am convinced that it is also frequently spread aerially in the manner I have indicated. The observations and remarks of Dr. Mitchell, the Medical Officer of Health of Hebburn as to the relationship of midden-privies to the prevalence of Enteric Fever are very interesting.

The suggestion made in some of the reports that galvanized covered pails containing a strong germicide should be left at all houses from which cases

of Enteric Fever are reported, for the reception of the excreta of the patients is a very good one, and might with advantage be universally adopted by sanitary authorities, while in all places the large uncovered midden-privies require to be replaced by smaller structures which should be regularly and frequently scavenged.

Continued Fever.

This disease was also prevalent in several sanitary districts at the same time as Enteric Fever, and cases notified as such were probably cases of the latter disease. 396 cases came to the knowledge of the district Medical Officers of Health during the year, and there were 21 deaths. The number of cases per month varied from 3 in March to 88 in September, and the disease was most prevalent and fatal (7 deaths) in the Easington rural district.

Measles.

There was a marked decrease in the mortality from Measles, the number of deaths last year being 284, equal to a death-rate of 0·38 per 1,000, as compared with 591 deaths in 1892, and a death-rate of 0·80. The rate in England and Wales was 0·36 per 1,000, which is slightly below the county rate. The disease was especially fatal in Jarrow, (73 deaths = to a death-rate of 2·03 per 1,000), while the mortality was also high at Shildon, Stanley, and in the Southern Division of the Houghton rural district. The seasonal prevalence of the disease was most marked during the last two months of the year. In Jarrow, the notification of Measles has now been discontinued, for not only was the expense

last year very great, (883 cases = £110), but the disease was more prevalent and fatal than in any other district, and has been very prevalent for several years. The only effect of notification of Measles in Jarrow, and of the precautions taken by the sanitary officials, apart from the educational influence on the parents, appears to have been the prolongation of the epidemic period of the disease.

If notification of Measles were made compulsory throughout the country (payment only of a fee to the medical attendant with respect to the first case notified from each house would probably be sufficient) and provision for isolating the cases also made, the prevalence of the disease could probably be controlled, for it must not be forgotten that Measles is the most fatal of all our infectious diseases, and causes on an average over 10,000 deaths every year. In consequence of the prevalence of this disease, school closure was resorted to at Jarrow, East Boldon, Wolviston and Haverton Hill, and Frosterley.

Whooping Cough.

254 deaths were registered from this disease, equal to a rate of 0·34 per 1,000. In 1892 the death-rate was 0·33, while for England and Wales last year it was 0·32 per 1,000. One-fourth of the deaths occurred in West Hartlepool, where the death-rate from the disease was 1·4 per 1,000. It was also fatally prevalent in the Tyneside towns of Felling, Hebburn and Jarrow, and in Stanley. A very large proportion of the deaths from Measles and Whooping Cough are the result of want of proper care and attention.

Diarrhœa.

There was an excessive mortality from infantile or summer Diarrhœa during the past year, the result undoubtedly of the hot summer which favoured fermentative processes and greatly increased the nuisances which are inseparable from a polluted soil, bad drainage and filthy midden-privies. Number of deaths was 1,096, and the death-rate 1·47 per 1,000, which is very much higher than the rate for England and Wales 0·96, and greatly exceeded that for the county in 1892 (0·46), when for the whole year the number of deaths was only 344, or less than the number of deaths registered during August of last year (369), and less than half the number during the third quarter (874). The deaths occurred almost entirely among children under 5 years of age; the chief causes being careless and improper feeding, and insanitary surroundings. The death-rate from Diarrhœa exceeded 3·0 per 1,000 in Brandon, and 2·0 per 1,000 in West Hartlepool, Consett, Houghton, Southwick, and in the Chester-le-Street and Sunderland rural districts.

Puerperal Fever.

Very few of the reports make any reference to this disease, though the mortality from it in some districts is by no means inconsiderable. The number of cases coming to the knowledge of Medical Officers of Health in the administrative county was 87, and the number of deaths 54, or a case mortality of 62 per cent. It is probable however, that a certain proportion of both the cases and deaths from this disease are not

returned as such, but under any circumstances the mortality is very high. The largest number of deaths occurred in the rural districts of Easington (11); Chester-le-Street (6); Sedgefield (5); and Durham, E. Division (4).

Precautionary Measures adopted against the spread of Infectious Diseases.

Infectious Diseases (Notification Act).—It is very satisfactory to note that the sanitary authorities of Benfieldside, Blaydon, Consett, Felling, Leadgate, Ryton, Whickham, (urban), and Easington and Sedgefield, (rural) have during the past year adopted this important Act, while it came into force at the beginning of the year in Durham City, Stanley, and the South Shields rural district. It has also been put into operation in the county borough of Gateshead, and is now in force throughout the county except in the following six districts :—

URBAN.	RURAL.
Bishop Auckland.	Auckland.
Southwick.	Teesdale.
Stanhope.	Weardale.

At the end of 1892 the population of the districts in which this act was not in force was 257,000 (excluding Gateshead), but at the end of last year this number had been reduced to 107,000, or less than one-seventh of the total population of the administrative county.

In all the above six districts, the adoption of this act is strongly recommended by the Medical

Officers of Health, and in the interests of the populations of those districts, this should be done without delay. Both the Medical Officers of Health of the populous Auckland rural district (64,000), state that frequently the first intimation of the existence of a case of dangerous infectious disease is the receipt of the death certificate. The cost of notification last year in those districts in which the Act was in operation during the whole year was £1 11s. 4d. per 1,000 population. In 1892 it was £1 2s. 7d.

Hospital Accommodation.—25 sanitary districts have provided some form of accommodation for the isolation of cases of infectious disease, but in many of these districts it is neither satisfactory nor sufficient for their requirements. In 6 of the 25 districts there is no hospital, but arrangements have been made for the reception of patients into the isolation hospital of a neighbouring sanitary authority, and in the case of the rural districts of Darlington, Hartlepool, South Shields and Stockton, this appears to be fairly satisfactory. A new permanent isolation hospital has been opened at Stockton during the year, while the joint hospital at Leadgate has been considerably enlarged. Hospital accommodation has also been provided at Durham, Blaydon, Southwick, and for the Chester-le-Street and Houghton-le-Spring rural districts, but the buildings are mostly built of corrugated iron and wood, or are of a temporary character, and cannot be considered satisfactory, though the accommodation in, and plan of con-

struction of the two hospitals erected in the Houghton rural district are fairly good. The Stanley Local Board has arranged for the use of the Leadgate joint hospital. At Seaham Harbour there is a small hospital in course of erection, and Felling and the Sunderland rural authority have purchased land for an isolation hospital, but at the end of 1893 there were 15 sanitary districts quite unprovided with means of isolating cases of infectious disease. The Medical Officer of Health of Shildon recommends that the County Council should erect isolation hospitals wherever necessary, and as the Isolation Hospitals Act of 1893 gives power to county councils to provide such hospitals, or to assist out of the county funds sanitary authorities who wish to make such provision, it is to be hoped that efficient means of isolating cases of infectious disease will shortly be available for every sanitary district in the county.

Very few districts are at present equipped with an efficient apparatus for disinfecting infected bedding and clothing. This is almost, if not quite as essential as an isolation hospital, in fact, no hospital fulfils its object without one. Proper ambulances are also much needed in many districts, as is also systematic disinfection of infected houses by a capable official of the sanitary authority.

The number of infectious cases removed to hospital during the year in the administrative county was 804, and the percentage of cases notified in districts where means of isolating them existed which were

so removed was 11·7. In the six boroughs the percentage was 28·1 * which is much above that for the rest of the county.

Water Supply.

The towns of Darlington, Stockton, Bishop Auckland, and part of Chester-le-Street, as well as several villages in the Stockton and Darlington rural districts, still use for drinking purposes water which is seriously polluted with unpurified sewage. The Hurry waterworks, for supplying Stockton (and Middlesbrough) and the villages in the county supplied by the Stockton Water Company, will shortly be completed, when a pure supply will be obtained. Dr. Barry's report of his enquiry into the extensive epidemic of Enteric Fever in the Tees valley during 1890-1 leaves no room for doubt that it resulted from the drinking of the river Tees water in the districts affected by it, and though the efforts of the County Councils to prevent the pollution of that river by sewage will undoubtedly effect a great improvement, the water supplied to the Darlington district, so long as it is obtained from the Tees below Middleton-in-Teesdale, can under no circumstances be considered quite free from danger. Complaint having been made to the Local Government Board by the County Council as to the polluted source (River Wear) from which the Bishop Auckland water supply was obtained, an enquiry was held by Col. Luard, one of the Board's inspectors, but his report is not yet pub-

* This does not include Measles, which was compulsorily notifiable in Jarrow.

lished. A similar enquiry, also as a result of a complaint by the County Council, was held by Dr. Maclean Wilson, one of the medical inspectors of the Board, into an epidemic of Enteric Fever in Chester-le-Street at the beginning of 1893, which it was alleged resulted from the drinking of impure water obtained from the Stanley Burn. Dr. Wilson in his report arrived at the conclusion that the epidemic in Chester-le-Street at the beginning of 1893 undoubtedly resulted from the drinking of the water supplied from that source, and thus confirmed the opinion previously formed by Dr. Duncan, the Medical Officer of Health, and myself. Legal proceedings to prevent the water obtained from this source from being used for drinking purposes were unfortunately unsuccessful.

According to the Medical Officer of Health, the water supplied to the Blaydon and Ryton urban districts is far from satisfactory, and a better and more plentiful supply appears to be very necessary.

At Marsden Colliery village, in the South Shields rural district, a serious outbreak of Enteric Fever occurred owing to the drinking of polluted water, but a pure supply has since been provided. At Easington and Castle Eden Colliery, in the Easington rural district ; at Lands Bank and Firtree villages, in the Auckland rural district, and throughout the Lyne-sack township of that district, there is no proper water supply, and that used for drinking purposes is at present brought from a distance in carts. Trimdon Colliery village, in the Sedgefield district, has been

supplied with water, but Trimdon village is still unprovided.

Owing to the drought and to the want of filtration, the water supplied by the Consett Water Company was very turbid and objectionable, and a number of cases of Enteric Fever occurred among persons who had recourse to clearer but more unwholesome water. As a result of action taken by the sanitary authorities concerned, and by the County Council, the water company has undertaken to provide efficient filtration of the water supplied by them, so that a repetition of last year's experience will in the future probably be avoided.

Housing of the Working Classes.

The necessity and importance of improving the sanitary condition of the houses of the working classes has during the past year been recognized by many sanitary authorities, and in several districts houses unfit for habitation have been closed, while in many others serious sanitary defects have been remedied. The enforcement by the County Health Committee of their powers under the Housing of the Working Classes Act (1890) has also done much good by causing several sanitary authorities, which had previously neglected to put the act in force with regard to insanitary property, to discharge their duties under it. At Shildon, Spennymoor, and in all the populous rural districts much sanitary improvement has been effected by the administration of the act. It is satisfactory to note that a large

number of insanitary back-to-back houses, especially in the rural districts of Chester-le-Street, Durham, and Sunderland have been provided with through ventilation. One of the most common defects in connection with small houses, which very soon causes dampness of walls and foundations, and seriously affects their sanitary condition, is the want of proper spouting and means of carrying off the rain water. In many sanitary districts there is a great want of house accommodation, and in such cases the closing even of grossly insanitary houses frequently causes great temporary hardship to the tenant, who may be unable to obtain another house without leaving the district.

Scavenging and Refuse Removal.

Serious nuisances are extremely common in many parts of the county owing to the want of a regular and systematic removal of excrement and house refuse, and disease is often spread by the filthy condition of the midden-privies resulting from the accumulation of large masses of refuse. In most of the larger urban districts the scavenging and removal of refuse is either undertaken by the sanitary authority or is done by contract, but at Tow Law and in many of the populous villages in the rural districts the condition of the midden-privies is often disgraceful and very dangerous to health. In all urban districts and in the populous villages of the rural districts the sanitary authority should hold themselves responsible for the regular and frequent removal of all filth accumulations from the neighbourhood of

houses instead of leaving the work to the owners or occupiers by whom it cannot at all times be satisfactorily performed. Throughout nearly the whole of the Stockton and South Shields rural districts the sanitary authorities have contracted for the cleansing of ashpits and the removal of refuse, which is generally very well performed at a comparatively small cost. The Medical Officers of Health of nearly every district where it is not already done strongly recommend that the sanitary authority should undertake the work of refuse removal and cleansing of ashpits, and in both the Auckland rural reports the dangers resulting from the present system are specially mentioned.

River Pollution.

The pollution of the rivers Tees and Wear, and of the Stanley Burn by sewage above the intake of public water supplies, still continued at the end of 1893, but as the result of the passing of the Rivers Pollution Amendment Act, 1893, the County Council is now able to deal with sanitary authorities and others responsible for such pollution, and the action which has recently been taken by the County Health Committee will shortly have the effect of greatly minimising the pollution of these watercourses and of reducing the danger to those populations who are obliged to use them as sources of their drinking water. Except for one or two paper mills and the washings from coal and a few lead mines, there is no serious manufacturing pollutions of non-tidal watercourses in this county, and their purification, which in many cases is greatly

needed, should not be a matter of great difficulty.

General Sanitary Work.

In many districts a great deal of work has been done in providing and improving privy accommodation, house drainage, sewerage, and means of sewage disposal. In several districts, however, where houses have been provided with sanitary conveniences the old objectionable midden-privy has been erected, and partly for this reason the County Health Committee has approved of a plan of a dry ash-closet, which is recommended for small house property both in urban and rural districts where the provision of some form of water-closet is impossible or undesirable. Ash-closets built on a similar plan have been for some years erected in South Shields, Jarrow, and other Tyneside towns, and are a great improvement on the midden-privy, as there is intimate admixture of the fœces and ashes, and they can be easily, and require to be frequently emptied.

Where however there is a proper system of sewerage, one of the best forms of privy accommodation is the improved slop water-closet, which when placed outside, has all the advantages of a water-closet and will not freeze, nor readily get out of order.

Many of the reports refer to dangers resulting from untrapped and defective house drainage, which especially in some of the rural districts exists to a considerable extent. In the Auckland and Houghton reports this defect is specially referred to as causing Enteric Fever. In many districts new sewers have

been laid down or old ones extended, and at Edmondsley, Esh Winning, Birtley, and Coundon, sewage disposal works have been completed. The system employed at Coundon is one of artificial filtration, after precipitation and subsidence, through sand gravel and a magnetic oxide of iron, and works very satisfactorily, the effluent being clean and colourless, and free from odour even after keeping for a considerable time. This system of sewage disposal should be very useful in small districts where land is difficult to procure, or is of a nature unsuitable for purifying sewage.

In many districts special attention was given to the prevention of nuisances, and to the removal of filth accumulations during the time of the threatened introduction of Cholera, and in the port sanitary districts special precautionary measures were adopted.

Returns of Inspectors of Nuisances.

These are summarized at the end of the report, and the majority of them indicate that valuable work has been done in the removal of nuisances, the supervision of water supplies, disinfection of houses, etc. Some of the returns however indicate a want of system in the work of the Inspector, or that the books recording the work done are not properly kept. In every district a daily, or at any rate a weekly record of his work should be systematically kept by the sanitary inspector, in suitable books which are easily obtainable, and while the majority of the returns show that this is carefully done, there are undoubtedly several exceptions. In the majority of the districts the disinfection of infect-

ed houses appears to be very rarely performed by the sanitary inspector. In some districts also the sanitary authority does not appear to have at all exercised its powers under the Public Health Acts, the whole of the notices for the abatement of nuisances, etc., having been informally served by the Inspector. There can be no doubt however that such notices have much more weight, and usually receive earlier attention if they are served by order of the Authority, and in all serious nuisances they should be so served.

The only returns not sent in were from Southwick and the South Shields and Durham rural districts. The returns were refused by the sanitary authorities of the two first-named districts, but for what reason is not evident, as the information given in them in no way increases the powers of the County Council over sanitary authorities.

Bye-laws.

During 1893 new sanitary bye-laws, approved by the Local Government Board, have been adopted in Hartlepool, Houghton, Hebburn, and Stanley. There are however still 15 sanitary districts the building and sanitary bye-laws of which are out of date and not in accordance with modern sanitary requirements, while the Borough of West Hartlepool, and the rural districts of Chester-le-Street, Sedgefield, Teesdale, and Weardale have no sanitary bye-laws in force, and these sanitary authorities have therefore practically no control over the erection of new buildings, privy accommodation, etc. The Chester-le-Street Authority have,

however, drawn up a set of sanitary bye-laws which have not yet received the approval of the Local Government Board, while in several other sanitary districts the adoption of new sanitary bye-laws is under consideration.

In 21 of the 40 sanitary districts, regulations under the Dairies and Cowsheds Orders are in force, and in 11 of these districts the regulations lay down a minimum cubic space in cowsheds per cow, (nine require 800 cubic feet, one requires 650 cubic feet, and one 500 cubic feet per cow).

In 25 districts bye-laws are in force with regard to Slaughter-houses.

Unfortunately in some districts where modern bye-laws have been adopted they are not properly enforced, and this is especially the case with regard to the size and construction of ash-pits and privies, and the amount of cubic space in, and the ventilation of cow-sheds, all very important matters which have a direct influence on health.

Popular Lectures on Sanitation.

Dr. Ellis of the Auckland rural district refers to the value of such lectures to the working classes. In my report for 1892 I also strongly recommended that such lectures should be instituted, and since that time the County Council has appointed a lady who has already delivered a number of interesting lectures on domestic sanitation in different parts of the county, which have been well attended and will undoubtedly do great good.

Many hundreds of lives, especially of young

children, would be saved yearly, by a better knowledge among the working classes of a few simple facts concerning domestic sanitation and the laws of health.

In conclusion, I must express my best thanks to the Medical Officers of Health in the county for the assistance they have so readily given to me in forwarding the monthly notification returns, and with regard to sanitary matters whenever I have required their help or co-operation. I am also much indebted to those sanitary inspectors who have during my inspection greatly assisted my work by placing their local sanitary knowledge at my disposal.

T. EUSTACE HILL,

County Medical Officer of Health.

July, 1894.

TABLE SHewing THE NUMBER OF BIRTHS, DEATHS, AND DEATHS FROM THE CHIEF
ZYMOTIC DISEASES IN THE ADMINISTRATIVE COUNTY OF DURHAM,
DURING EACH OF THE MONTHS OF 1893.

	Births.	Deaths.	Deaths under 1 year.	Total Zymotic Deaths.	Small-pox.	Scarlet Fever.	Diphtheria and Mem-branous Croup.	Fever, Enteric, Continued, & Typhus.	Diarrhoea.	Measles.	Whooping Cough.
JANUARY ...	... 2465	1101	311	143	5	18	24	23	12	37	24
FEBRUARY ...	... 1967	1023	254	112	1	12	32	16	10	11	30
MARCH ...	... 2212	1065	290	105	1	21	20	6	17	24	16
APRIL ...	... 2195	1099	367	94	2	10	11	13	11	18	29
MAY ...	... 2369	1142	339	120	4	15	29	15	11	20	26
JUNE ...	... 2501	1113	331	166	5	17	30	11	61	21	21
JULY ...	... 2424	1343	532	317	2	10	12	28	214	22	29
AUGUST ...	... 2212	1546	681	462	1	10	10	42	369	10	20
SEPTEMBER ...	... 2325	1513	594	430	...	8	20	91	291	13	7
OCTOBER ...	... 2309	1175	348	248	2	12	12	120	73	16	13
NOVEMBER ...	... 2117	1398	371	209	7	15	27	78	19	50	13
DECEMBER ...	... 2119	1458	359	205	4	16	26	44	15	64	36



CHART SHOWING NUMBER OF DEATHS DURING EACH MONTH OF 1893, FROM TOTAL ZYMOtic
DISEASES AND FROM ENTERIC AND CONTINUED FEVERS AND DIARRHEA,
IN THE ADMINISTRATIVE COUNTY OF DURHAM.

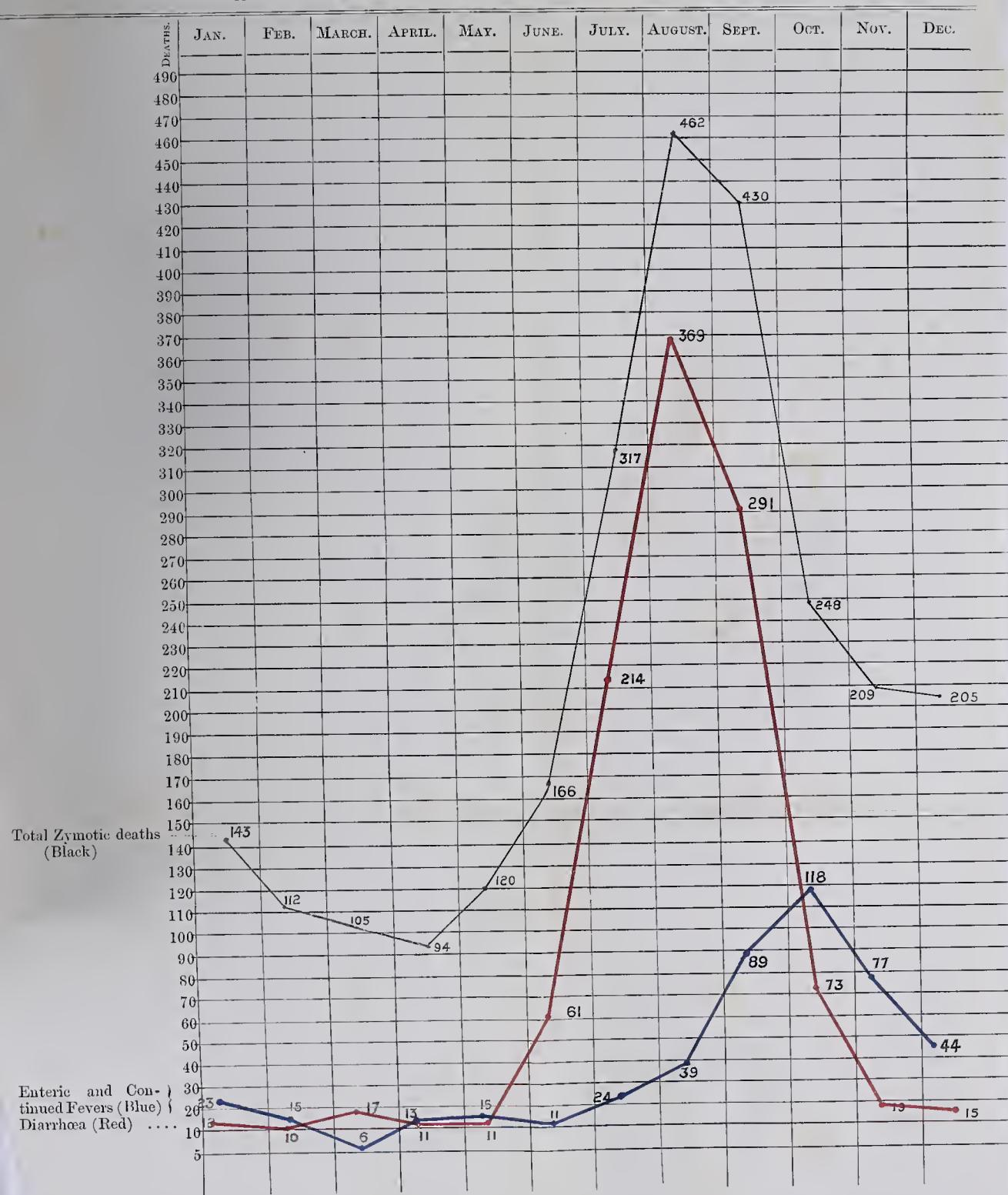
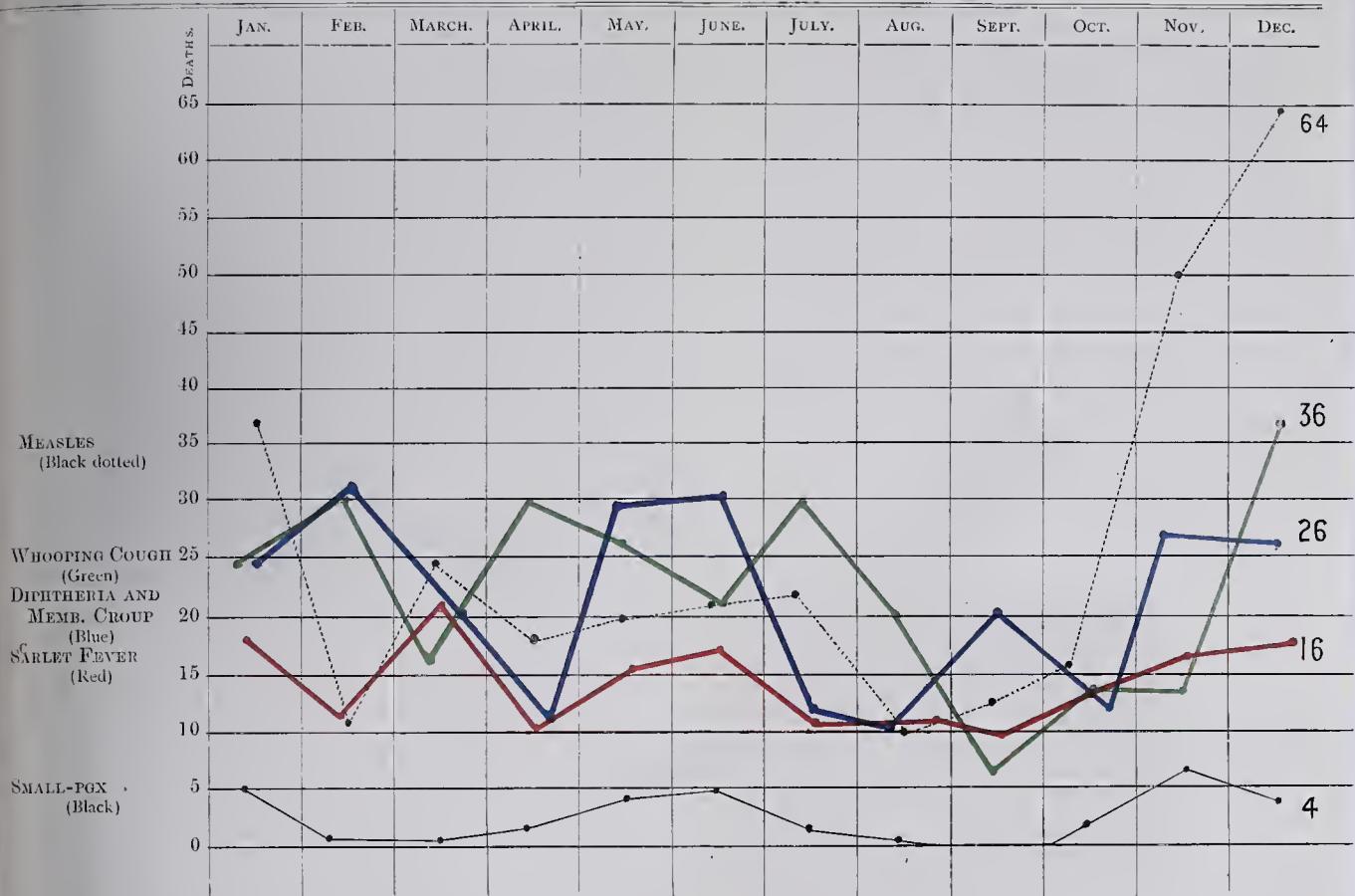


CHART SHEWING THE NUMBER OF DEATHS DURING EACH MONTH OF 1893 FROM
 SMALL-POX, SCARLET FEVER, DIPHTHERIA, MEASLES, AND WHOOPING COUGH
 IN THE ADMINISTRATIVE COUNTY OF DURHAM.



URBAN SANITARY DISTRICTS.

BOROUGHS.

DARLINGTON.

JAMES LAWRENCE, M.D., Medical Officer of Health.

Area in Acres, 3,945.	Estimated Population, 1893, 38,500.
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Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
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31·4	18·5	2·7	180
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Phthisis death-rate, 1·1 ; Respiratory diseases death-rate, 2·8. The above rates are higher than those for 1892. The infant mortality-rate is especially high, the increase of this and the zymotic death-rate resulting from the large mortality from Infantile Diarrhoea.

Infectious Diseases.

295 cases of infectious disease, or 25 more than last year, were notified. Exactly 100 more cases of Enteric Fever were notified than in 1892, but on the other hand there was a considerable decrease in the prevalence of Scarlet Fever. Referring to Enteric Fever Dr. Lawrence says, "I am of opinion that the "epidemic of Enteric Fever which visited us this back "end was due to the very hot dry weather which "prevailed in the summer, and the amount of dust which "resulted, and was blown about into the houses and food "of the people; probably also the enormous number of "flies and insect life which flourished, conveyed dust and "disease into the food, and so acted as a factor in spreading the disease." Only two cases of Small-pox were reported during the year, and these were at once

successfully isolated. Influenza was twice epidemic during the year, and besides causing 11 deaths directly had the effect of greatly increasing the death-rate from respiratory diseases. Special precautions were taken to prevent the introduction of Cholera into the town. 117 cases of infectious disease were removed to the Isolation Hospital, nearly half of the cases of Scarlet and Enteric Fevers being so removed. Dr. Lawrence refers to the danger of removing patients to the hospital when in an exhausted condition, and says, "early removal of infectious cases to the Hospital is "desirable both for the welfare of the patient and also as "a safeguard to those who may be in close proximity "with them, whether friends or neighbours. I think the "public avail themselves of the advantages of isolation "afforded by the Hospital in an increasing ratio yearly."

General Sanitation.

A large amount of work has been done under the Factory and Workshops Act, and the act is being carefully and systematically enforced. Great improvement has been effected by the paving of the back streets. Ashpits were frequently cleaned and disinfected, and drains flushed with disinfectants in solution. The Medical Officer of Health refers to the "unsatisfactory and insanitary condition of the ashpits," and says, "I think it is worth making a great effort to raise "the floors of these above the back street level, and "roof them over, so that decomposition may be pre- "vented from arising in them, causing foul smells and "an impure atmosphere in the yards. This air must get

"into the houses, and to a certain extent lower the health "of the inhabitants." Referring to excrement disposal in the older portions of the town Dr. Lawrence says :— "I am in favour of water-closets in these situations instead of pail-closets or privy-middens. We have an abundant water supply to carry off excrementitious matter before decomposition takes place, so that the air in these places, which are more or less closed in, might not be contaminated by faecal decomposition. With our present system of open ash-pits there is no other system of excrement disposal to be compared with the water carriage." 881 nuisances were abated during the year, and careful supervision appears to have been exercised over slaughter-houses, bakehouses, milkshops, &c.

Sanitary Requirements.

A better system of excrement disposal, and an improvement in the structure of the ash-pits, as recommended by the Medical Officer of Health.

DURHAM.

A. M. VANN, M.R.C.S., Medical Officer of Health.

Area in Acres, 880. Estimated Population, 1893, 14,846.

Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
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25·4	22·5*	1·2	166
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Phthisis death-rate, 1·7 ; Respiratory diseases death-rate, 5·2 (very high).

Infectious Diseases.

121 cases were reported under the Notification Act, which came into force in the city in February.

* Excluding 45 deaths not belonging to the district the death-rate was 19·5 per 1,000.

Scarlet Fever was the most prevalent disease (75 cases). A serious outbreak of Small-pox occurred at the beginning of the year, and 20 cases were reported altogether, 5 of which proved fatal. At the time of the outbreak the town was unprepared to cope with the disease, but the efforts which were made to prevent the disease spreading happily proved successful. The disease appears to have been introduced by tramps, and Dr. Vann suggests that some supervision over their movements should be exercised. The report contains some valuable statistics as to the efficacy of vaccination in mitigating the virulence of an attack of Small-pox. A corrugated iron Isolation Hospital was erected during the year, and 14 patients suffering from infectious diseases were admitted. The town is unprovided with any disinfecting apparatus.

General Sanitation.

Considerable progress has been made in the work of abolishing "old fashioned and insanitary privies and erecting water-closets in their stead," and in other instances defective ashpit-privies have been repaired or re-modelled. Legal proceedings to enforce notices to abate nuisances issued were necessary in three instances and were successful. The water supply was satisfactory throughout the year, and the report states that the Cowsheds (20 in number), Slaughter-houses (25), and the Common Lodging-houses have been kept under close observation. No action appears to have been taken under the Housing of the Working Classes Act. On the recommendation of the Medical

Officer of Health, the Infectious Diseases (Prevention) Act, 1890, and the Public Health Amendment Act, 1890, were adopted during the year.

Sanitary Requirements.

The provision of a suitable disinfecting apparatus.

HARTLEPOOL.

J. RAWLINGS, M.R.C.S., etc., Medical Officer of Health.

Areas in Acres, 552. Estimated Population, 1893, 22,500.

Birth-rate. Death-rate. Zymotic-rate. Infant Mortality-rate.

37·0	18·4*	1·8	133 (low).
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Phthisis death-rate, 1·1. Respiratory diseases death-rate, 3·5. The above rates compare very favourably with those for 1892.

Infectious Diseases.

84 cases of infectious disease were notified during the year. With the exception of Diarrhoea, which caused 33 deaths, no other zymotic disease was prevalent in the Borough.

Three cases of Small-pox occurred, but the precautions that were at once taken prevented the disease from spreading.

Influenza was prevalent during the last quarter of the year, and "had the effect of greatly increasing the deaths from Pneumonia." Four of the 17 cases of Erysipelas reported proved fatal, and the Medical Officer of Health states that the cases "for the most part occurred in the immediate neighbourhood of foul middens and ash-pits." Every house from which cases

* Excluding the deaths of 30 persons not belonging to the district the total death-rate was only 16·6 per 1,000.

of infectious disease were notified was visited by either the Medical Officer of Health or his deputy.

Seven cases of infectious disease were isolated in Hospital.

General Sanitation.

Two dwelling-houses temporarily and one cellar-dwelling permanently were closed as unfit for habitation.

In 25 instances water-closets have been substituted for privies, and at Robson's Buildings "all the huge and offensive ashpit-privies" have been replaced by water-closets.

82 nuisances in connection with dwelling-houses have been abated, and in 10 instances of non-compliance with sanitary notices prosecutions were successfully instituted.

The Common Lodging-houses, with one exception, when the license was withdrawn, have been kept in a fairly healthy condition.

Two samples of water were analysed, and one found to be impure was condemned as unfit for use. Under the Food and Drugs Act one sample was analysed and certified as pure.

Owing to the death of the Sanitary Inspector the record of work done in his department could not be accurately prepared.

Sanitary Requirements.

None mentioned.

JARROW.

G. W. WEIR, M.D., Medical Officer of Health.

Area in Acres, 728.	Estimated Population, 1893, 35,860.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
35·8	20·24*	5·2	150

Phthisis death-rate, 2·1 ; Respiratory diseases death-rate, 3·3. The extremely high zymotic death-rate was in great measure due to the heavy mortality from Measles and Diarrhoea.

Infectious Diseases.

The number of cases reported under the Notification Act was 1,353, of which Measles comprised 883. The result of notifying Measles in Jarrow has of late years been very disappointing. The expense has been great, the work of the sanitary officials has been largely increased, and the frequent closing of the elementary schools must have considerably interfered with their efficiency, but apparently without success, for during the last three years Measles has been more prevalent and fatal in Jarrow than in any other sanitary district in the county.

With regard to the prevalence of Measles Dr. Weir says :—“ I cannot help thinking that this exceptional prevalence during the last three years, “ during which times epidemics have been annual “ instead of biennial, is to a certain extent the result of “ the efforts that have been made to cut them short, for “ it proves that numbers of susceptible children escaped “ from year to year, though the attack has only been “ postponed ; but whether anything has been gained by

* Exclusive of 4 deaths not belonging to the district.

"substituting annual for biennial epidemics is doubtful,
"it has certainly caused great disturbance in infant
"departments of elementary schools."

A serious outbreak of Small-pox occurred at the beginning of the year, and to isolate the cases it was found necessary to erect a corrugated iron hospital which, in the opinion of the Medical Officer of Health, is placed in dangerous proximity to the permanent Isolation Hospital. The steps taken to prevent the disease from spreading were successful.

Scarlet Fever, Typhoid Fever, and Diphtheria were all prevalent during the year, and the last-named disease appears to be increasing in the borough.

174 cases were isolated in Hospital, and of these 159 recovered. The town is still without a Disinfecting Apparatus.

General Sanitation.

One house has been closed as unfit for habitation, and action has been taken for the improvement of the insanitary property on the Pit Heap mentioned in last year's report.

98 midden-privies which were insanitary have been replaced by more suitable conveniences.

During the year the establishment of a Public Abattoir was considered, but it was decided to postpone the matter.

62 samples were analysed under the Food and Drugs Act, and there were eight successful prosecutions undertaken for offences against this act. Much good work appears to have been done in the Inspector of Nuisances department.

Sanitary Requirements.

The Medical Officer of Health points out the necessity of :—

1. A proper Disinfecting Apparatus.
2. A suitable site for a Small-pox Hospital.
3. Increasing the accommodation at the hospital, which is at present inadequate for the needs of the district.
4. Arranging for the future disposal of excrement and refuse.

STOCKTON URBAN DISTRICT.

J. HAGUE CLEGG, M.R.C.S., Medical Officer of Health.

Area in Acres, 2,848.	Estimated Population, 1893, 51,000.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
34·7	16·8	1·9	153

Phthisis death-rate, 1·8 ; Respiratory diseases death-rate, 2·2. The above figures, and especially the general death-rate, compare favourably with those for 1892.

Infectious Diseases.

342 cases were notified as compared with 209 in the previous year. Typhoid and Continued Fevers were by far the most prevalent (214 cases), and there were also 86 cases of Scarlet Fever and 22 of Small-pox. There were several out-breaks of Small-pox during the year, but owing to prompt isolation, disinfection, and vaccination the disease was prevented from seriously spreading. Scarlet Fever was of a very mild type, and caused no deaths. Typhoid Fever was very prevalent during the latter

half of the year, and was the subject of a special report by the Medical Officer of Health. In this report Dr. Clegg points out that the disease attacked those living in both good and insanitary houses, and was probably in the first place not connected with either defective drainage, privy accommodation, or milk supply. Every house infected was, however, supplied with the town water, and the report states that though "all three first "of the above-mentioned causes may have been "factors in the spread of the disease, the fact of the "water supply being liable to pollution must be "especially borne in mind." 55 cases were removed to Hospital, and everything appears to have been done by the sanitary officials to prevent the spread of the disease.

There were only 17 cases of Diphtheria and Croup notified, but the mortality was very high (10 deaths). In apparently only a few instances were insanitary surroundings connected with the occurrence of the disease.

Diarrhoea was very prevalent during the summer, and caused 68 deaths, and one death with Choleraic symptoms was especially inquired into. A special report was prepared by the Medical Officer of Health as to the precautionary measures to be adopted against the introduction of Cholera.

A permanent Hospital for Infectious Diseases was opened at the end of the year.

General Sanitation.

During the summer a more frequent removal

of nightsoil was undertaken, and the sewers were more frequently flushed.

The Slaughter-houses (39), Common Lodging-houses (35), and Milk-shops, Dairies, and Cowsheds have all been regularly inspected and generally found in good condition. A Public Slaughter-house for the town appears, however, to be highly desirable.

The Offensive Trades in the town have been conducted satisfactorily, but Bye-laws are required for their proper supervision.

A large quantity of unsound food was seized during the year, and whenever proceedings were taken convictions were obtained.

2,856 nuisances were abated as a result of action by the Sanitary Inspector.

Sanitary Requirements.

1. A Public Slaughter-house.
2. Bye-laws for the control of Offensive Trades.
3. A more frequent removal of nightsoil appears to be desirable.

WEST HARTLEPOOL.

S. GOURLEY, M.D., Medical Officer of Health.

Area in Acres, 2,454.	Estimated Population, 1893, 46,435.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.

35·9	18·3	4·3	183.
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Phthisis death-rate, 1·1 ; Respiratory diseases death-rate, 3·9. The birth-rate is considerably lower than in 1892 (38·8), while the general, zymotic, and infant mortality-rates are all greatly increased, a result

almost entirely attributable to the great mortality among young children.

Dr. Gourley points out that more than half the total deaths in West Hartlepool occurred in children under 5 years of age, and says :—“ This could be “ largely prevented by greater cleanliness, and the “ exercise of a ‘ common sense ’ in feeding and nursing “ the young. As the result of a pretty long experience “ and careful observation, I am more than ever of “ opinion that the insurance of infants should be pro- “ hibited in all cases except in the regular Friendly “ Societies which are used by the industrious and “ provident classes.” ”

Infectious Diseases.

223 cases, or 35 more than in 1892, were notified, the most prevalent diseases being Scarlet Fever (133) and Enteric Fever (50). Small-pox, as in many other towns, was imported by a tramp who infected six other persons, but the cases were all removed to hospital, and the disease prevented from spreading. The cases of Scarlet Fever were of a very mild type.

Of the cases of Enteric Fever, some “ seemed “ to follow on convalescence from Influenza, and 13 of “ the worst cases were clearly traced to impure well “ water.” ”

The most fatal zymotics were those which are not notifiable, viz., Diarrhoea (94 deaths), Whooping Cough (63 deaths), and Measles (20 deaths). Altogether there were 177 deaths from these three diseases compared with 65 in 1892.

33 cases were removed to the Isolation Hospital of the Port Sanitary Authority for treatment.

General Sanitation.

The town's water supply was satisfactory, and the results of an analysis given in the report show it to be chemically of extremely good quality. 16 impure wells were closed during the year.

The Local Government Board have sanctioned a site for the erection of new Public Slaughter-houses, and the report points out the great necessity for such buildings.

The Food and Drugs Act appears to have been efficiently enforced. Of 43 samples taken, 5 were adulterated and 5 of doubtful quality. Dr. Gourley, in pointing out the necessity of rigidly enforcing this Act, says :—“ I consider adulteration the meanest and most “ injurious form of fraud which is perpetrated on the “ public, and which seems to be on the increase. The “ public, and especially the poor, have no means of pro-“ tecting themselves, except under this act, hence the “ necessity of carrying it out actively and constantly.”

. A large amount of work appears to have been done by the Inspector of Nuisances. 923 informal and 140 formal notices were served for the abatement of nuisances, and in 11 instances magisterial proceedings were resorted to for the purpose of enforcing compliance. 15 carcases of meat and a large quantity of other meat and fruit were destroyed as being unfit for food. 106 houses in which cases of infectious disease had occurred were fumigated, and 970 articles of

bedding, etc., disinfected, while careful attention appears to have been given to Workshops and Factories, Common Lodging-houses (7), Dairies (65) and Cow-sheds (47), and Bake-houses. Special precautions were also taken with regard to Cholera.

Sanitary Requirements.

None mentioned.

LOCAL BOARDS.

BARNARD CASTLE.

ALFRED H. SEVIER, M.B., Medical Officer of Health.

Area in Acres, 533.	Estimated Population, 1893, 4341.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
26·7	25·8	2·3	181

Phthisis death-rate, 2·0; Respiratory diseases death-rate, 2·7. Excluding the deaths of 14 persons not belonging to the town, the death-rate was 22·6 per 1,000, but both this and the infant mortality-rate are very high, and much above the average.

Infectious Diseases.

111 cases were notified, which included 79 of Measles, 11 of Scarlet Fever, and 7 of Small-pox. The cases of Small-pox were all treated in the Workhouse Infectious Hospital, and in one instance proved fatal. All the patients were either vagrants or navvies at the Hury Waterworks. Diarrhœa was very fatal, causing 6 deaths, and during the last quarter of the year the death-rate from acute lung diseases was high as the result of the prevalence of Influenza. One case of Scarlet Fever was removed to Hospital.

General Sanitation.

Except during the summer drought the water supply was pure and abundant. All the Common Lodging-houses were frequently visited and inspected. The Slaughter-houses were kept under strict supervision, but the Medical Officer of Health would recommend the establishment of a Public Abattoir for the town and the abolition of private slaughter-houses. The main sewers were frequently flushed, but the report does not allude to the pollution of the Tees by the sewage of the town. "No action "has been called for in connection with Offensive "Trades, Factories, and Workshops."

Sanitary Requirements.

Except the establishment of a Public Slaughter-house, the Medical Officer of Health makes no recommendations.

BENFIELDSIDE.

GEORGE RENTON, M.D., Medical Officer of Health.

Area in Acres, 1,525.	Estimated Population, 1893, 6,460.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
28·7.	20·1	2·7	235 (very high).

Phthisis death-rate, 2·7; Respiratory diseases death-rate, 2·6. The death-rate, though not very high, is the highest recorded for many years, but the increase was due to the high mortality from non-preventable diseases. The mortality from Phthisis was especially marked. The high infant mortality-rate was more apparent than real owing to the small number of births during the year, though the death-rate among young children was much above the average.

Infectious Diseases.

The Infectious Diseases (Notification) Act was adopted during the year. 67 notifications were received, and comprised 27 of Scarlet Fever and 18 of Typhoid Fever. There was no case of Small-pox reported. Houses in which cases of infectious diseases occurred were fumigated and the bedding, etc., disinfected. Owing to the Isolation Hospital being reserved for Small-pox no cases of infectious diseases were removed from their homes. Diarrhœa caused 7 deaths and Whooping Cough 4 deaths, but none of the zymotic diseases assumed epidemic proportions.

General Sanitation.

The houses of the working classes are generally in good order, but a general defect is said to be the want of suitable paving of the yards of the houses. In some localities there appear to be houses in a bad sanitary state owing to dampness and want of through ventilation.

Dr. Renton again points out the necessity of covering over the middens and of so constructing them as to allow of a proper admixture of excrement and ashes. He repeats his recommendation of previous years that the Local Board should undertake the cleansing of these receptacles.

Some of the Cowsheds and Slaughter-houses are without through ventilation and not kept properly clean.

The water supply from the Consett Water Co. was, owing to the continued dry weather, deficient in

quantity and of bad quality, but as a result of representations from the various Sanitary Authorities whose districts are supplied by the water, steps will be taken by the Water Co. to prevent such a recurrence.

The main sewers appear to have been regularly flushed.

Sanitary Requirements.

1. The improvement of the insanitary houses which may exist in the district.
2. The covering in of the open midden-privies.
3. The frequent and regular cleansing of the ash-pits and privies, which can only be performed by the Sanitary Authority undertaking the work.

BISHOP AUCKLAND.

T. A. McCULLAGH, M.R.C.S., Medical Officer of Health.

Area in Acres, 692. Estimated Population, 1893, 10,500.

Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
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38·3	22·8*	4·4	161
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Phthisis death-rate, 1·0; Respiratory diseases death-rate, 3·5. The general and zymotic death-rates were both high, the increase in the latter being "due "to the large number of fatal cases of Typhoid Fever "and Diarrhoea."

Infectious Diseases.

The Infectious Diseases (Notification) Act is not in force in this district, and the record of the prevalence of these diseases is incomplete. Only 4 cases of Scarlet Fever were known to the Medical Officer of Health. Typhoid Fever was fatal in 17

* Excluding 19 deaths in Workhouse not belonging to the district, the death-rate was 21·0 per 1,000.

cases. The disease was not confined to any particular part of the town, and it assumed an epidemic character towards the end of 1892, and continued until November, 1893. 106 cases were investigated by the Medical Officer of Health, and speaking as to the cause of the disease he says :—“ I believe that the primary case was “the pollution of our water supply by sewage infected “with Typhoid ; and secondly that the disease was “further propagated by the entrance of infected sewer “gas into houses in consequence of defective trapping “and deficient ventilation of the main drains ; and in “some instances infection was probably spread by the “discharges of patients suffering from Fever being “thrown undisinfected into ashpits and privies.”

Three cases of Small-pox occurred among tramps in the Workhouse, and were removed to the Isolation Hospital for treatment.

Diarrhœa was very fatal, causing 17 deaths, while 4 deaths each resulted from Measles and Whooping Cough. Twelve houses were disinfected after infectious disease.

General Sanitation.

An inspection of the town was made by a Medical Inspector of the Local Government Board in view of a possible outbreak of Cholera in this County, and he recommended, among other things—that the Sanitary Authority should issue bills advising the boiling and filtering of the water before using it for dietic purposes ; that the sewers should be more efficiently flushed and ventilated ; that the emptying of ashpits and privies

should be undertaken by the servants of the Board ; that model sanitary Bye-laws should be adopted and a systematic inspection of nuisances carried out ; the adoption of the Infectious Diseases (Notification and Prevention) Acts and the provision of a Disinfecting Apparatus ; the more effectual supervision of Dairies and Cowsheds ; and the enforcement of the Housing of the Working Classes Act in the case of insanitary houses, especially at Back and Fore Bondgate.

The new waterworks came into use in June, and though the quantity has been ample it appears that at times the filtration is bad, and the water supplied to the town discoloured. Until the defects in filtration are remedied the Medical Officer of Health advises the public to boil and filter the water before using it.

A good deal of work is stated to have been done to insanitary property. 1,083 informal notices have been served and " 159 special notices by order of "the Board."

Considerable improvements have been made in the ventilation of the sewers.

There was one seizure of unwholesome food, and a conviction was obtained with regard to it.

Sanitary Requirements.

1. The adoption of the Infectious Diseases (Notification) Act and the provision of a Disinfecting Apparatus.

2. The improvement in the filtration of the water supply.

3. The fulfilment of those recommendations made by the Medical Inspector of the Local Government Board which have not yet been carried out.

BLAYDON.

PHILIP BROWN, M.D., Medical Officer of Health.

Area in Acres, 9,349.	Estimated Population, 1893, 14,850.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
38·6	18·2	3·4	148

Phthisis death-rate, 1·0; Respiratory diseases death-rate 2·4. The mortality of children under 5 years of age was again high, being 45 per cent. of the total deaths.

Infectious Diseases.

The Infectious Diseases (Notification) Act was adopted towards the end of the year. Small-pox was very prevalent during part of the year in the Spen and Blaydon portions of the district, and, as in other places, a tramp appears to have first introduced the disease. When the disease broke out there was no Isolation Hospital available, and therefore practically no means of preventing the spread of the disease. Ultimately a disused chapel was transformed into a Hospital for the reception of patients, and 8 cases were there isolated. There were altogether 60 cases of the disease, with 10 deaths. The report points out that two obvious lessons were taught by the epidemic, viz., the danger to the public "by the erratic wanderings of a few individual tramps, carrying with them "from place to place the seeds of infection," and the necessity of a Hospital for Infectious Diseases.

6 deaths occurred from Scarlet Fever and 7 from Typhoid Fever. As to the prevalence of Typhoid Fever Dr. Brown says:—"Grave suspicions attach to "the character of the water supply, for owing to the

"long continued drought this first great necessity of
 "life and health was so diminished in quantity and
 "injured in quality as to render it on several occasions
 "totally unfit for use."

Diarrhoea was very fatal (18 deaths), and two deaths resulted from Influenza. 76 cases of infectious disease were reported during the year.

General Sanitation.

In the report is a summary of the work done by the Sanitary Inspector, from which it appears that 87 notices have been served for the abatement of nuisances, 39 new ash-closets have been built, 17 ashpit-privies rebuilt, 3 cowsheds put into good repair, etc. Very little detailed information is, however, given in the report as to the sanitary work effected during the year and the sanitary improvements still necessary, while no reference is made to several important subjects, viz., Housing of the Working Classes, Sewerage and Sewage Disposal, Sanitary Bye-laws, etc. There is also no reference in the report to the insanitary condition of the houses in the older streets in the town, and at Blackall Mill, which were mentioned in last year's report.

The report is **not** printed.

Sanitary Requirements.

1. A permanent Isolation Hospital, suitable for the requirements of the district.
2. The remarks of the Medical Officer of Health on the water supply in its relation to Typhoid Fever should receive the earnest attention of the Authority.

BRANDON AND BYSHOTTLES.

HENRY SMITH, M.B., Medical Officer of Health.

Area in Acres, 6,683.	Estimated Population, 1893, 14,971.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
35·6	16·8	4·7	194

Phthisis death-rate, 1·4; Respiratory diseases death-rate, 3·7. The general death-rate was low, but the mortality among children under five years of age was extremely high, being considerably more than half the total deaths registered.

The high zymotic death-rate resulted from the prevalence of Infantile Diarrhoea.

Infectious Diseases.

323 cases were notified, of which Scarlet Fever comprised 223, while 57 were of Typhoid Fever. There was no case of Small-pox notified during the year. 93 patients were admitted to the Isolation Hospital, and the Medical Officer of Health speaks in high terms of the excellent work done by that institution. He recommends, however, the erection of an additional ward, as the present accommodation is inadequate. On the advice of Dr. Smith a man was appointed to disinfect houses in which cases of infectious disease had occurred. Disinfectants were also supplied and other precautions taken to prevent the spread of infectious disease. During the year works were erected for purifying the sewage of the Hospital, and an ambulance carriage was also provided. The Steam Disinfecting Apparatus appears to work satisfactorily, and the report states that in no case has a disease been contracted after the disinfection of the clothes and bedding.

General Sanitation.

The general condition of the district appears to be satisfactory. The water supply is generally good, while the scavenging and cleansing of the ash pits is done by contract and has been fairly well attended to. The greater part of the district has been inspected by the members of the Board in company with the Medical Officer of Health and Sanitary Inspector, when many of the Slaughter-houses and Dairies were visited and the sanitary condition of the district was found to be good. There are no Common Lodging-houses or tenemented properties, and no Offensive Trades are carried on in the district. The drinking water at Littleburn Farm was found to be impure, the well was closed and the farm is now supplied with pure water. 110 verbal and 7 written notices were served for the abatement of nuisances.

Sanitary Requirements.

Increased accommodation for cases of infectious disease.

CONSETT.

GEORGE RENTON, M.D., Medical Officer of Health.

Area in Acres, 993. Estimated Population, 1893, 8,460.

Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
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36·2	19·8	4·3	177
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Phthisis death-rate, 3·0; Respiratory diseases death-rate, 4·0. The high zymotic death-rate is attributable to the large mortality from Infantile Diarrhoea and Whooping Cough. The infant mortality-rate was also high for the same reasons.

The mortality from Phthisis and acute lung diseases was very high, and is attributed to the occupations of the people, the rigorous climate, the clayey nature of the sub-soil, and the high altitude of the district.

Infectious Diseases.

The Notification Act came into operation in July, and the report states that its adoption has been a distinct advantage, especially with regard to the outbreak of Small-pox. After an absence of 20 years Small-pox appeared in the district in April, but unfortunately the first case was not recognised. There were altogether 13 cases and 3 deaths, and with one exception all the cases were removed to Hospital. Every precaution was taken to prevent the disease from spreading, but though re-vaccination was strongly urged few persons availed themselves of its advantages. Dr. Renton says "Small-pox has been such a stranger "to this district that the value of vaccination, as a "preventive method, is not appreciated by the un- "educated or partially uneducated classes, and my fear "is that with the ignorance prevailing there may be a "rude awakening in the near future." With the exception of Diarrhœa and Whooping Cough, which caused 18 and 7 deaths respectively, no other infectious disease was prevalent during the year. Disinfection of houses clothing, and bedding appears to have been carried out where necessary.

General Sanitation.

Except the paving of the yards, which is not

generally satisfactory, the houses of the district are stated to be in a fairly sanitary condition, and no cases of serious over-crowding were noticed. The water supply from the Consett Company was, owing to the drought, for some months of very bad quality and "altogether unfit for human consumption." The report again points out the urgent necessity of the Board insisting on the covering over of the open midden-privies, and of it taking into its own hands the emptying and cleansing of those receptacles. "The Dairies, Cowsheds, and Slaughter-houses still call for "some improvement, and the proper regulation of "Slaughter-houses requires attention." 81 notices have been issued for the abatement of nuisances, which were all properly remedied.

Sanitary Requirements.

1. The carrying out of the suggestions of the Medical Officer of Health as to the paving of the yards of houses, the covering over of the midden privies, and the Authority undertaking the removal of ashpit refuse.

2. A more efficient supervision of the Dairies, Cowsheds, and Slaughter-houses appears to be necessary.

FELLING.

M. F. KELLY, L.F.P.S., etc., Medical Officer of Health.

Area in Acres, 2,684. Estimated Population, 1893, 18,000.

Birth-rate.	Deate-rate.	Zymotic-rate.	Infant Mortality-rate.
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40·4	23·3	2·8	177
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Phthisis death-rate, 1·5 ; Respiratory diseases death-rate, 3·4. The birth-rate remains high, while

the general, zymotic, and infant mortality death-rates are all considerably higher than for 1892.

Infectious Diseases.

The Infectious Diseases (Notification) Act did not come into force till the end of the year, and the number of cases of infectious disease during 1893 cannot therefore be ascertained. Next to Diarrhoea and Whooping Cough, which caused respectively 15 and 10 deaths, Typhoid Fever was most fatal with 9 deaths. Five of the deaths were at Wardley, and were attributed to untrapped drains, while in connection with the other deaths there appears to have been sanitary defects.

Diphtheria and Croup caused 8 deaths, and these diseases were more prevalent than in previous years, though no special cause for their prevalence could be discovered. Scarlet Fever and Measles each caused 4 deaths.

General Sanitation.

The cleansing of the middens and the removal of house refuse is said to be better done than formerly, since two more horses and carts have been employed. After being emptied, the middens are disinfected with Chloride of Lime. "A number of old midden-privies "have been converted into earth-closets during the "year. Sewers have been re-laid and given a proper "fall. Damp and dilapidated property is undergoing "a thorough renovation, and by this time next year I "hope we will have none to complain of."

The water supply was during the summer,

owing to the drought, cut off at night, but otherwise was satisfactory. A site of $1\frac{1}{2}$ acres has been obtained for a Fever Hospital at Windy Nook, and the work is to be commenced at once. Dr. Kelly remarks that it is a pity it is not more central and accessible. Dairies, Cowsheds, and Slaughter-houses, as well as the district generally, are reported to have been periodically inspected, but no details are given.

Sanitary Requirements.

None specially referred to, but a permanent Isolation Hospital should be erected forthwith, and a proper Disinfecting Apparatus provided, while the want of trapping of the drains at Wardley, which appears to have been responsible for several deaths from Typhoid Fever, should be remedied without delay.

HEBBURN.

ROBERT MITCHELL, M.A., M.B., Medical Officer of Health.

Area in Acres, 1,180.	Estimated Population, 1893, 18,000.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
37·8	17·4	3·8	158

Phthisis death-rate, 1·6; Respiratory diseases death-rate, 2·9. The general death-rate is satisfactory, and all the above rates are much lower than those of the previous year. The zymotic rate, however, [was still high owing to the fatal prevalence of Diarrhoea.

Infectious Diseases.

200 cases were notified, including 78 of Scarlet Fever (no deaths) and 55 of Enteric Fever (9 deaths). There were also 24 cases of Diphtheria, with 3 deaths.

The 9 deaths from Typhoid Fever all occurred in the last four months of the year. Dr. Mitchell discusses at length the probable cause of the prevalence of this disease, and gives as his opinion that while the predisposing causes were the extreme heat and prolonged drought, the distribution of the disease, especially during its early prevalence, pointed to the actual cause being in some way dependent on the ashpit-privies ; for though there are many more ash-closets in the town than midden-privies, there were more than three times as many cases in houses dependent on the latter form of privy accommodation. When once the disease became prevalent it was disseminated in various ways from its original foci all over the town, and the midden-privies, which appeared at first to be the original cause of the disease, became at a later period no longer recognizable as being a special factor in the outbreak.

School attendance is referred to as being one of the causes of the spread of Diphtheria. Diarrhœa caused 34 deaths, or nearly half the total zymotic deaths ; the intense heat, errors of diet, bad food, and filth surroundings are referred to as contributing to the fatality from this disease.

36 cases were removed to the Fever Hospital, including 20 of Scarlet Fever and 14 of Typhoid Fever. The Hospital has been greatly improved by increased accommodation for nurses, by improved drainage, and by the provision of hot and cold water in each ward, and of a disinfecting chamber. The supply of water is to be increased.

General Sanitation.

A large amount of sanitary work has been effected. At the Quay the insanitary privy-ashpits have been substituted by good ash-closets, one for each family. Dr. Mitchell thinks “there can be no question that the ashpit system of storage of refuse is injurious to health and the cause of much unnecessary sickness and mortality. . . . In an Urban District such as this where the houses are closely aggregated together in streets, the system is essentially unsatisfactory and insanitary, and is one worthy of a special effort for its removal. Its abolition may also be urged on the ground of economy. . . . The cost of wages for the extra men required for the removal of the refuse from the ashpits over what would be required if they were substituted by dry closets, may I think be fairly calculated at £150 a year.”

The greater part of excremental and other refuse is disposed of at sea. A large number of damp insanitary houses at the Colliery, (Square and adjoining rows) have been satisfactorily remedied.

The water supply appears to have been satisfactory.

Several lots of unsound food were destroyed during the year, and in one instance a prosecution was successfully instituted.

The administration of the Food and Drugs Act, and the inspection of Dairies and Cowsheds, has also been well carried out.

The new Bye-laws have received the consent

of the Local Government Board, and are now in force.

Sanitary Requirements.

The adoption of the Public Health Amendment Act.

HOUGHTON-LE-SPRING.

D. S. PARK, M.D., Medical Officer of Health.

Area in Acres, 1,551.	Estimated Population, 1893, 6,578.
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Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
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39·1	25·1	6·1	252
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Phthisis death-rate, 1·2 ; Respiratory diseases death-rate, 5·4. The general death-rate, as well as the zymotic and infant mortality rates are all excessively high. Of the total deaths 57·5 per cent. were under five years of age.

Infectious Diseases.

247 cases were reported under the Notification Act, a very large number considering the size of the district. The most prevalent diseases were Scarlet Fever (145 cases and 7 deaths), Typhoid Fever (66 cases and 8 deaths), and Diarrhoea (14 deaths). There were four cases of Small-pox, and three of them (tramps) were isolated in the Workhouse Hospital, but the disease fortunately did not spread.

The prevalence of Scarlet Fever is attributed to the carelessness of parents and their utter indifference to infection.

Enteric Fever became prevalent in July in Colliery Row and continued to October, while in November the disease became epidemic in Houghton, from which time to the end of the year there were 26 cases.

The report does not consider the water supply in any way responsible for the outbreaks, while in many of the houses infected no sanitary defects could be found. At Colliery Row, however, there was a serious nuisance from the sewer ventilators, while the ashpit-privies were a source of nuisance in many instances.

Diarrhoea was very fatal in July and August, while Measles and Whooping Cough each caused 5 deaths.

Influenza was twice prevalent during the year, and greatly increased the mortality from lung diseases.

Every case of infectious disease notified is visited by the Medical Officer of Health, and disinfectants are supplied free of charge. The great need of an Isolation Hospital is pointed out.

General Sanitation.

An analysis of the water supplied to the town showed it to be chemically of good quality, but the report states that the water is undoubtedly subject to intermittent pollution, and requires to be carefully watched.

35 notices have been served under the Housing of the Working Classes Act; 20 have been complied with, and the others are receiving attention. In some of the confined yards water-closets have been substituted for midden-privies.

The cleansing of ashpits appears to be fairly well done except in the case of poor people living on private property. It is pointed out that the work

could be much better attended to if undertaken by the Authority.

Steps are to be taken to improve the sewerage of part of Colliery Row and to pave the back streets, and plans for the latter purpose are being prepared by the Surveyor.

The Dairies and Cowsheds, Slaughter-houses and Common Lodging-houses have been kept under careful supervision, and are stated to be in a satisfactory condition.

Sanitary Requirements.

1. The erection of a permanent Isolation Hospital.

2. The removal of excrement and house refuse by the Sanitary Authority.

3. A careful supervision of the water supply.

4. The paving of the back streets is a most important sanitary improvement, and should be carried out with as little delay as possible.

The report is **not** printed.

LEADGATE.

GEO. RENTON, M.D., Medical Officer of Health.

Area in Acres, 1838.	Estimated Population, 1893, 4,560.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
39·3	18·2	2·4	184

Phthisis death-rate, 0·8 ; Respiratory diseases death-rate, 2·6. There is a considerable increase in the birth-rate compared with last year (27·8), while the total death-rate and infant mortality-rate are also somewhat higher.

Infectious Diseases.

The Notification Act came into force in April, and during the year 1911 notifications were received. Small-pox was the most prevalent disease (42 cases and 4 deaths). It assumed an epidemic form in November, and appears to have been spread about by a man living in Nelson Street, who was attended during illness in June by an unqualified medical man, who failed to recognise the illness as that of Small-pox, and consequently no precautions were taken. Isolated cases of the disease were reported during each of the months from June to October, but in November 29 cases were reported, and 6 in December. All the patients but two were removed to hospital, and with notification, isolation, and other precautionary measures, the disease was kept under control, and by the end of the year apparently stamped out. During the epidemic vaccination was extensively adopted by the public, and as showing the efficacy of vaccination, Dr. Renton points out "that no vaccinated child under 10 years of age has contracted the disease, and no successfully re-vaccinated adult." 14 cases of Diphtheria, with 2 deaths, occurred, and the disease appears to have been spread both in Leadgate and outside the district by an infected child attending the Iveston village school. The school was voluntarily closed for a short time and the outbreak soon terminated. There were 17 cases of Enteric Fever (1 death), and most of the cases occurred during the first five months of the year, the result probably of the epidemic of the previous

year. 41 cases (all Small-pox) were removed to hospital, and the usual precautionary measures with regard to infectious diseases were adopted.

General Sanitation.

The report again refers to the poor accommodation afforded by many of the old two-roomed houses, but some have been greatly improved by the addition of back kitchens, etc. Defects of channelling in Front Street, and of spouting in Shipley's Square are under consideration by the Board. The danger to the public health of the midden-privies which are still uncovered is pointed out, as is also the desirability of the Board undertaking the cleansing of ash pits and removal of refuse.

The cleanliness of the Dairies and Cowsheds, and the removal of offal from Slaughter-houses have not in all cases been satisfactory.

As in other districts supplied by the Consett Company, the water supply was not satisfactory during the year, the need of proper filtration being very evident.

The Medical Officer of Health points out that the most important act of the Sanitary Authority during the year was the adoption of the Infectious Diseases (Notification) Act, and referring to the outbreak of Small-pox says, without hesitation, "that to the "operation of this Act we are indebted to the "fact that we have been able to keep within reason- "able limits what would have been under the old "regime a most disastrous epidemic."

Sanitary Requirements.

1. The covering in of all midden-privies, and the removal of excremental and house refuse by the Authority.
2. A more careful supervision over Dairies, Cowsheds, and Slaughter-houses.

RYTON.

PHILIP BROWN, M.D., Medical Officer of Health.

Area in Acres, 5,150.	Estimated Population, 1893, 6,000.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.

34·6	16·3	2·5	154
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Phthisis death-rate, 1·0; Respiratory diseases death-rate, 2·6. The death-rate and zymotic-rate are both much higher than in 1892.

Infectious Diseases.

The Infectious Diseases (Notification) Act was adopted in November, and 18 cases were notified. There were two cases of Small-pox (1 death) near Spen where the disease was prevalent, but there was no further spread. There were 4 deaths from Diphtheria, but in connection with the cases no sanitary defects were discovered. Two deaths occurred from Enteric Fever, and 7 deaths from Diarrhoea, several of the cases of the latter disease being choleraic in character. Influenza was somewhat prevalent, and caused 3 deaths.

General Sanitation.

The only matter referred to in the report is the scarcity of water during the year, producing "what "may fitly be termed the water famine of 1893." No

reference is made to many subjects which have a direct bearing on the sanitary condition of the district.

Sanitary Requirements.

The same as in previous years, viz. :—

1. A suitable Isolation Hospital and Disinfecting Apparatus.

2. An improved and more reliable water supply.

The report is **not** printed.

SEAHAM HARBOUR.

T. GIBBON, M.R.C.S., Medical Officer of Health.

Area in Acres, 1,089.	Estimated Population, 1893, 9,370.
Birth-rate.	Death-rate.
44·1	23·0

2·9

147

Phthisis death-rate, 1·8 ; Respiratory diseases death-rate, 4·6. The death-rate, though lower than last year, is still far too high, but the infant mortality-rate shows considerable improvement (178 in 1892).

Infectious Diseases.

The number of cases notified was 61, which included 36 of Enteric Fever and 17 of Scarlet Fever.

Two cases of Small-pox were imported into the town by a travelling circus, but were successfully isolated in the temporary Hospital.

Enteric Fever caused 8 deaths, and appears to have been prevalent ; details as to the period and area of prevalence and probable cause might with advantage have been included in the report.

There were 10 deaths from Diarrhoea and 7 from Measles.

Disinfectants were supplied to infectious cases free of charge, and disinfection of rooms was performed where necessary.

A site for a permanent Fever Hospital has been obtained and plans adopted, and the building is to be erected as soon as possible.

Special precautions were taken to prevent the introduction of Cholera, and quarantine stations were established.

General Sanitation.

The main sewers are ventilated by a number of shafts, and discharge their contents into the sea. The sewers are copiously flushed from time to time. The house drains are said to be carefully trapped. The water is obtained from the magnesian limestone formation, and is stated to be excellent in quantity and quality, the daily supply being equal to about 19 gallons per head. The midden-privies and ash-pits are emptied and cleansed by the employés of the Sanitary Authority. The excrement and refuse is disposed of partly on land, and some is deposited in the sea. The Dairies, Common Lodging-houses, and Slaughter-houses are not registered, but are stated to be carefully inspected.

Sanitary Requirements.

1. The erection of an Isolation Hospital and provision of a Disinfecting Apparatus.
2. The registration of Dairies, Common Lodging-houses, and Slaughter-houses.
3. New Sanitary Bye-laws are also very necessary.

SHILDON AND EAST THICKLEY.

S. FIELDEN, M.D., Medical Officer of Health.

Area in Acres, 1,066.	Estimated Population, 1893, 9,795.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
36·2.	25·8	8·3	239

Phthisis death-rate, 1·3; Respiratory diseases death-rate, 2·2. The general, zymotic, and infant mortality-rates were all excessively high, a result chiefly caused by the epidemic prevalence of several of the zymotic diseases. Compared with 1892 the zymotic rate was 8 times as high, and the total death-rate and infant mortality-rate nearly double.

Infectious Diseases.

305 notifications were received, which comprised 196 of Typhoid Fever, 63 of Scarlet Fever, and 16 of Diphtheria.

The Scarlet Fever cases were of a very mild type, and no death resulted. Diphtheria was prevalent towards the end of the year and was responsible for 8 deaths, while two of the cases of Membranous Croup ended fatally.

Typhoid Fever became epidemic in July, and continued so with very fatal results to the end of the year. The total deaths from this disease were 38. The district was carefully inspected and an enquiry made into the cause of the epidemic by Dr. Bruce Low, of the Local Government Board, and his report will shortly be published. Dr. Fielden says, "it is worthy "of note that many of the virulent cases occurred very "near the line of several old watercourses in the district,

"and we have proved that many house drains were in "direct communication therewith." He also points out that the epidemic was due to a combination of circumstances and not to any one specific cause. There was strong evidence that some of the early cases were imported from other districts where the disease was prevalent, and it is pointed out that defects of drainage and sewerage, milk supply, and the ashpit-privies, together with the drought and heat, all contributed to the prevalence of the disease. The water supply however, appeared in no way to blame. Diarrhœa and Measles were both very fatal with 16 and 12 deaths respectively. There is no Isolation Hospital for the district, and during the past year the need must have been greatly felt.

General Sanitation.

Systematic inspections of the district have been made both by the Medical Officer of Health and Inspector, and 453 nuisances have been abated after written notices.

New sewers and properly trapped drains have been laid down in Bolckow, Vaughan, and Adelaide Streets, Hildyard Terrace, and other places. The work of ventilating the sewers has been continued, and the flushing of them was effected as far as the scarcity of water would allow. Insanitary houses in Pit Row have been put into a habitable condition, and the spouting of many others improved. The report points out that the back-to-back houses are objectionable and will have to be dealt with. Several back streets have

been paved, and others are being similarly improved. Regulations under the Dairies and Cowsheds Orders have been printed, and Dr. Fielden thinks it of great importance that they should be rigorously enforced. The water supply is stated to have been in every way satisfactory.

Sanitary Requirements.

The Medical Officer of Health recommends :—

1. That the question of erecting Isolation Hospitals in suitable centres should be taken up by the County Council.

2. That a dozen galvanized air-tight pails be procured for use in Typhoid cases.

3. The provision of a proper Disinfecting Apparatus.

4. That the Board should recommend to the County Council that it is desirable that elementary instruction in general sanitation and nursing be given in all schools, and that public lectures should also be delivered on the same subjects.

5. It is also of the greatest importance that the many defects of drainage and sewerage in the town should be remedied with as little delay as possible.

SOUTHWICK.

HENRY LISTON, L.R.C.P., Medical Officer of Health.

Area in Acres, 845. Estimated Population, 1893, 10,770.

Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
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37·8	20·9	4·5	174
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Phthisis death-rate, 1·6; Respiratory diseases death-rate, 3·3. The zymotic-rate was again very high, while the infant mortality-rate was considerably

in excess of the previous year.

Infectious Diseases.

The district is still without the protection afforded by the Notification Act, and the Medical Officer of Health again strongly recommends its adoption by the Sanitary Authority. There were 10 cases of Small-pox reported during the year, all of which were properly isolated. The report points out that 40 deaths, or one-fifth of the total deaths, resulted from Typhus, Typhoid and Continued Fevers, and Diarrhœa. In connection with these diseases Dr. Liston says :—“ I have now to direct the attention of the “ Board to the very alarming state of the township as “ evidenced by the large number of deaths from Fever “ and Diarrhœa. I have classed these two groups of “ Zymotic diseases together, as from the virulent type of “ the Diarrhœa which has existed during the past year, “ I have no doubt that the Diarrhœa, Typhus, Typhoid, “ and Continued or undefined Fevers have arisen from “ the same source, viz., saturation of the ground by “ leakage from the enormous privy-ashpits and “ middens.” There were altogether 26 cases of Typhus Fever, and it would appear from the report that if the first few cases had been isolated the prevalence of the disease might have been greatly lessened. Typhoid Fever caused 10 deaths. A temporary Isolation Hospital was provided in a disused glass works, which was found of service in isolating the cases of Small-pox. A permanent Hospital and proper Disinfecting Apparatus appear to be greatly needed.

General Sanitation.

Two groups of houses at White House and Wanless Place have been closed under the Housing of the Working Classes Act, but there still remains some very bad property which ought to be condemned. The general water supply is satisfactory, but the Medical Officer of Health has again to report that several houses are without water taps, while some houses have no water supply laid on. With regard to the erection of new dwelling-houses the report points out that they are still being built without damp-proof courses, and without any attempt to keep out ground air or damp, while the privy accommodation is of an antiquated type. A special inspection of the district was made during the year by Dr. Maclean Wilson, of the Local Government Board, and a large number of recommendations for the sanitary improvement of the district were made by him.

Sanitary Requirements.

1. The adoption of the Notification Act and the provision of a permanent Isolation Hospital and Disinfecting Apparatus.
2. The abolition of the insanitary midden-privies mentioned in the report.
3. The enforcement of the Housing of the Working Classes Act with regard to insanitary property.
4. Some systematic inspection of the district for the purpose of detecting nuisances.
5. New Sanitary Bye-laws.
The report is **not** printed.

SPENNYMOOR.

J. C. O'HANLON, L.R.C.S.I., Medical Officer of Health.

Area in Acres, 168.	Estimated Population, 1893, 6,041.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
36·9	21·7	3·6	184

Phthisis death-rate, 1·5; Respiratory diseases death-rate, 5·8. The general and zymotic death-rates both compare unfavourably with those for 1892, when the rates were respectively 18·7 and 2·9 per 1,000. The death-rate from acute lung diseases exceeds the high death-rate of the previous year (5·6).

Infectious Diseases.

171 cases were notified, the most prevalent of the dangerous infectious diseases being Diphtheria and Membranous Croup (61 cases and 7 deaths), Scarlet Fever (47 cases and no deaths), and Enteric Fever (24 cases and 5 deaths).

No reference is made in the report either to the period and area of prevalence, or to the probable cause, of these diseases.

Diarrhoea was very fatal, and caused 10 deaths.

There is no Isolation Hospital or Disinfecting Apparatus, and their provision without delay is strongly urged by the Medical Officer of Health.

General Sanitation.

The main sewer is too small, and at flood times overflows into the cellars of the houses in High Street and causes a very serious nuisance. An offensive nuisance is said to exist at the back of Thomas Street, where the drainage from cow-houses runs over the surface soil into the beck.

The insanitary ash-pits in Edward Street still exist. A large number of ashpit-privies in Jackson Street in close proximity to houses have been replaced by sanitary ash-closets, and a similar improvement is to be effected in other streets. The removal of excremental and other refuse is performed by contract between 10 p.m. and 8 a.m., and after being emptied all ash-pits are disinfected.

The water supply has been satisfactory.

The Dairies, Slaughter-houses, and Meat Market appear to have been kept in good order. The caretaker's house in the Town Hall has been made sanitary, and a large number of yards have been relaid with brick or cement.

Sanitary Requirements.

1. A permanent Isolation Hospital and a Disinfecting Apparatus.

2. The enlargement of the main sewer to prevent the flooding of the houses in High Street.

3. The abatement of the nuisances at the back of Thomas Street.

STANHOPE.

W.M. ROBINSON, M.D., Medical Officer of Health.

Area in Acres, 211.	Estimated Population, 1893, 1,864.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
29·5	15·0	1·0	109

Phthisis death-rate, 1·0; Respiratory diseases death-rate, 2·1. The death-rate is satisfactory, and fractionally lower than in 1892.

Infectious Diseases.

The Infectious Diseases (Notification) Act has not been adopted in this district. There were seven cases of Typhoid Fever, with one death. In some instances the disease was imported, and in others insanitary conditions appear to have existed.

Cases of Influenza also occurred during the year, but were not fatal.

General Sanitation.

Three systematic house-to-house inspections were made by the Medical Officer of Health and the Sanitary Inspector. 14 notices (9 for structural defects) have been served, and by the end of the year 11 had been complied with. Seven houses are still without ashpits, and two have no privy.

The water supply was inadequate during the summer months, but steps are being taken to prevent a deficiency in future.

The sanitary improvements include the substitution of ash-closets for insanitary middens in four instances, the prevention of the pollution of the river at Butt's Ford, and the re-laying of drains and their efficient trapping in several places.

The Local Government Board has refused to grant a loan for sewage purification works for the Square unless the sewage is purified by passing over land.

Sanitary Requirements.

The adoption of the Infectious Diseases (Notification) Act, and the carrying out of the require-

ments mentioned in last year's report, and by the Medical Inspector of the Local Government Board in his report of December, 1893, which include an Isolation Hospital; improved systems of excrement and sewage disposal and sewerage. The regulation of Dairies, Cowsheds, and Slaughter-houses; and new Sanitary Bye-laws.

STANLEY.

T. BENSON, M.D., Medical Officer of Health.

Area in Acres, 2,006. Estimated Population, 1893, 8,700.

Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
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36·2	20·2	2·8	200
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Phthisis death-rate, 1·5; Respiratory diseases death-rate, 4·2. The infant mortality-rate is very high, and the death-rate from acute lung diseases is also above the average.

Infectious Diseases.

There were only 46 notifications during the year, the most prevalent diseases being Enteric Fever (22 cases) and Scarlet Fever (11 cases).

Two cases of Small-pox were reported and at once removed to the Leadgate Fever Hospital. The disease was imported from the Spen.

The only place where Enteric Fever was prevalent was South Moor, all the cases but four occurring in this village. The disease broke out at the end of 1892, and 14 cases were reported during the first three months of 1893. The sewage from the houses in South Moor where most of the cases occurred finds its way into the Stanley Burn, the

water of which is, lower down the stream, used for drinking purposes at Chester-le-Street. A serious epidemic of Enteric Fever occurred in Chester-le-Street at the beginning of 1893 among those consuming the water in question, and was most probably due to the specific pollution of the water supply by the sewage of the houses at South Moor. The persistence of the disease at South Moor appears to have resulted from the unpaved open midden-privies and the defective surface channelling.

Measles and Whooping Cough were both prevalent and fatal, each disease causing 10 deaths.

The Leadgate Fever Hospital is apparently available for the use of the district, and two cottages were secured as temporary hospitals in case of emergency.

General Sanitation.

Three insanitary houses were closed and eight were condemned. The South Moor sewage works are to be enlarged, and the main sewer at Old South Moor is to be extended to receive the sewage of the High Rows, Barracks, and Quaking Houses, which at present pollutes the Stanley Burn. The construction of sewage disposal works for Stanley, Shield Row, etc., is also under consideration, and plans are being prepared. The water supplied by the Consett Company was of very bad quality during part of the year.

“Some better method for the removal of “refuse should be adopted. The ash pits are frequently

"overflowing," and the refuse from slaughter-houses is not frequently enough removed in summer time.

The ceiling of the garrets used as sleeping rooms in the older houses is recommended, as is also the "improvement of those abominations the large un-covered uncemented privy-middens."

New Sanitary Bye-laws have been adopted by the Authority.

Sanitary Requirements.

1. The enforcement of the Housing of the Working Classes Act with regard to insanitary property.

2. The abatement of nuisances arising from midden-privies.

3. The removal of excremental and other refuse by the Sanitary Authority.

4. The prevention of the pollution by sewage of the Stanley Burn. (This is most important, and should be carried out without delay).

TOW LAW.

JAMES WILD, L.R.C.P., Medical Officer of Health.

Area in Acres, 470.	Estimated Population, 1893, 4,564.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
37·5	19·9	4·8	178

Phthisis death-rate, 0·44; Respiratory diseases death-rate, 4·6 (high). The zymotic and infant mortality-rates are both greatly in excess of those of the previous year.

Infectious Diseases.

52 cases of infectious disease were notified, in-

cluding 24 of Scarlet Fever, 11 of Diphtheria and Croup, and 8 of Enteric and Continued Fevers. There appear also to have been 66 cases of Cholera reported, but these were undoubtedly not of the Asiatic type. Though the death-rate from Scarlet Fever, Diphtheria, Croup, Fevers, and Diarrhœa is very high (20 deaths), the report makes no reference to the probable causes of this high mortality.

General Sanitation.

The report refers in detail to the sanitary condition of the streets and localities of the town, and indicates that there are very many grossly insanitary conditions existent, such as absence of privy accommodation, filthy midden-privies, and defective drainage. The removal of excrement and house refuse is evidently badly performed, and serious nuisances are as a result common.

At Furnace Bank and Dan's Castle cases are mentioned of the contents of midden-privies leaking into houses. The condition of the Dairies and Cowsheds also appears to be disgraceful, for the Medical Officer of Health says :—“I am of opinion “that the housing of milking cows is so bad as “to have a prejudicial effect on the animals, this being “reflected on the milk given, and the milk again having “a serious effect on the children using it.” 27 deaths from Consumption of the Bowels out of a total of 91 amongst children “is, I think, a much too high per-“centage, and in my opinion is almost entirely due to “the milk supplied. It would be wise to adopt the

"Cowsheds and Dairies Act, and have its rules at "once put into operation."

Sanitary Requirements.

1. The provision of an Isolation Hospital and Disinfecting Apparatus.

2. A proper system of excrement removal.

3. Modern Sanitary Bye-laws; the enforcement of the Housing of the Working Classes Act with regard to insanitary property ; and the proper supervision of the Dairies, Cowsheds, and Slaughter-houses.

4. The many individual nuisances mentioned in the report should also be abated without delay.

The report is **not** printed.

WHICKHAM.

A. W. ATTWATER, L.R.C.P., Medical Officer of Health.

Area in Acres, 5,961.	Estimated Population, 1893, 9,600.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
34·2	16·2	2·8	155

Phthisis death-rate, 1·2 ; Respiratory diseases death-rate, 3·0.

Infectious Diseases.

The Infectious Diseases (Notification) Act came into force in December, 1893. Two cases of Small-pox occurred during the year; one of the patients contracted the disease in Yorkshire and the other probably in Gateshead. One patient was removed to the Gateshead Fever Hospital, and in both instances strict precautions were successfully taken to prevent the disease spreading. There were very few cases, and only one death from Enteric Fever, but :

Scarlet Fever caused 5, Diphtheria and Croup 4, Whooping Cough 6, and Diarrhœa 10 deaths.

The same precautions were taken against Cholera as were mentioned in last year's report.

The district is unprovided with either Isolation Hospital or Disinfecting Apparatus.

General Sanitation.

The removal of excremental and other refuse is done satisfactorily by contract, but the report recommends that the work should be done at night or early morning as frequent complaints are made of the ash pits being emptied at all hours of the day.

The houses of the working classes are said to be old, but not insanitary.

The water supply has been fairly good considering the drought.

A new drain has been laid at the west end of Whickham, and existing sewers have been kept in good order.

No unsound meat offered for sale has come under notice.

Sanitary Requirements.

1. Provision for isolating infectious patients is urgently needed.

2. The suggestions as to the time of the removal of excrement should receive attention.

WILLINGTON.

R. E. BROWN, L.R.C.P., Medical Officer of Health.

Area in Acres, 3,795.

Estimated Population, 1893, 7,940.

Birth-rate. Death-rate.

Zymotic-rate. Infant Mortality-rate.

35·8

20·9

3·5

221

Phthisis death-rate, 0·6 ; Respiratory diseases death-rate, 4·1. The zymotic and infantile death-rates were both much above the average, chiefly owing to the large mortality from Diarrhœa and Measles.

Infectious Diseases.

87 cases were notified during the year, including 51 (5 deaths) of Typhoid Fever and 22 of Scarlet Fever. Most of the cases of the former disease are attributed to the exceptional dryness of the season and to the scarcity of water, which prevented the efficient flushing of the drains. There was one case of Small-pox, a tramp, in a Common Lodging-house. There being no Isolation Hospital for the district the patient could not be removed, but fortunately the disease did not spread. Diarrhœa was responsible for 15 deaths and Measles for 7.

General Sanitation.

The report refers to most of the conditions affecting the health of the district. There are some back-to-back houses in Willington and Page Bank, but generally the houses are said to be roomy and well lighted. House drains are reported, with a few exceptions, to be properly trapped, but the sewage of the district discharges more or less directly into the River Wear. The contents of the midden-privies "are carried away at intervals," but the report does not say whether the disposal of excrement is satisfactorily effected. The Common Lodging-houses (2) are both licensed and appear to be in fairly good condition. The Slaughter-houses (12) are registered and kept in

good condition. The report does not state whether any bye-laws exist for the regulation of Dairies, Milk-shops, and Cowsheds, but the cowsheds of Stockley Fell Farm are said to be without sufficient space, while some farm buildings at Low Willington are quite unfitted for the housing of cattle. The water supply is abundant and of good quality (Weardale Co.) but one of 3 samples of well water taken for analysis was polluted, and the well was condemned as unfit for use. 135 informal and 2 formal notices have been served by the Inspector of Nuisances.

Sanitary Requirements.

1. The provision of an Isolation Hospital and Disinfecting Apparatus.
2. The prevention of the pollution of water-courses by the sewage of the district.
3. The back-to-back houses should, where possible, be provided with through ventilation.
4. The enforcement of the Dairies and Cowsheds Orders.

RURAL SANITARY DISTRICTS.

AUCKLAND UNION (No. 1 District).

T. A. McCULLAGH, M.R.C.S., Medical Officer of Health.

Area in Acres, 19,130.	Estimated Population, 1893, 27,514.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
38·2	19·5*	3·4	166

*Including 7 deaths in Workhouse belonging to the district, the death-rate would be 19·8 per 1,000 population.

Phthisis death-rate, 0·9 ; Respiratory diseases death-rate, 3·2. The zymotic death-rate was much above the average of previous years, and results from the large number of deaths from Typhoid Fever, Diphtheria, and Diarrhoea, diseases all intimately connected with insanitary conditions.

Infectious Diseases.

The Notification Act is not in force in this important district, and the Medical Officer says "I "seldom know of the presence of infectious diseases "except when fatal, and then only from the death "returns." Diphtheria was very prevalent and fatal at Byers Green and Old Park, causing 14 deaths. At Old Park Terrace, where the disease first broke out, the drains were close to the pantries, and untrapped, all sorts of refuse were thrown into the lane at the back of the houses, and the water supply was unsatisfactory. "All the Diphtheria arose after the cessation of scavenging" during the strike, but the disease was very greatly disseminated by school attendance, and the schools might with advantage have been closed. Enteric Fever caused 17 deaths (5 in Coundon Grange and 5 in St. Andrews), but the cause of the prevalence is not stated. Diarrhoea was very fatal and responsible for 37 deaths, the chief causes being improper food and unhealthy surroundings, aggravated by the drought of last year. Measles (10 deaths) was very prevalent in Eldon and Newfield. No reference is made to the disinfection of houses by the authority after infectious disease. Two cases of Small-pox were

removed from Coundon to the Urban Isolation Hospital for treatment.

General Sanitation.

Two houses at Wharton Street, Coundon, are stated to be unfit for habitation, while insanitary houses are referred to as existing at Witton Park, South Church, Leasingthorne, and Bush Row and the Square, Newfield. There is a want of proper water supply at Old Park Terrace, and the well at Etherley Dene is polluted, and in the opinion of the Medical Officer should be closed.

At Middlestone and Merrington many houses are without drainage, while serious defects of drainage are reported as existing at the Pit Rows, Byers Green, Witton Park, Merrington, and several parts of Newfield. Several instances of river pollution are referred to. The sewage of Escomb and Witton Park discharges unpurified into the Wear and the danger of such pollution to the inhabitants of Bishop Auckland, who use the polluted river water for drinking purposes, is pointed out. The sewage of a large portion of Newfield also empties into the Wear, and at Fylands Bridge there is similar pollution of the Gaunless. At Coundon the sewage disposal works are in operation and work most efficiently. The system is one of precipitation, and filtration through gravel sand and a magnetic oxide of iron, and is certainly very successful. Similar works for the Etherley Dene sewage are in progress. The sewage disposal scheme at Newfield is said to be unsatisfactory. The Medical

Officer of Health recommends that the authority should undertake the removal of ashpit and house refuse. "At present it is often badly and irregularly "done. In some places during the strike it was not "done at all, and a loathsome and dangerous condition "resulted." 1061 nuisances were dealt with during the year, and legal proceedings were successfully resorted to in several instances. At the Pit Rows, Byers Green, and at Dent Street, Fylands Bridge, important sanitary improvements are reported.

Sanitary Requirements.

1. The adoption of the Notification Act and the provision of an Isolation Hospital.
2. The removal of excremental and house refuse by the Sanitary Authority.
3. The prevention of river pollution and the remedying of the many defects of privy accommodation, drainage, &c., mentioned in the report.

AUCKLAND UNION (No. 2 District).

GEO. W. ELLIS, L.R.C.P., Medical Officer of Health.

Area in Acres, 43,393.	Estimated Population, 1893, 35,960.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
39·4	17·6*	1·9	154

Phthisis death-rate, 1·3; Respiratory diseases death-rate, 2·6. The above vital statistics are fairly satisfactory. Dr. Ellis thinks it of great importance that lectures on Health, dealing specially with the feeding and nursing of children, should be organized by the County Council, and is convinced they would

*Including 11 deaths in the Workhouse belonging to the district, the death-rate would be 18·0 per 1,000 population.

be the means of saving hundreds of lives and averting much suffering.

Infectious Diseases.

The report strongly urges the adoption of the Infectious Diseases (Notification) Act, which is not in force, and Dr. Ellis states that it often happens "that "the first intimation he has of their existence (infectious "diseases) is the receiving of a copy of the death "certificate."

Disinfection is carried on as far as possible, but the provision of an Isolation Hospital and Disinfecting Apparatus is strongly recommended.

Typhoid Fever caused 11 deaths. Six of these were at Crook where the disease was prevalent, and where, "as I have stated before, it must more or less continue to be so until the branch drains are "thoroughly overhauled." Five of the six deaths are stated to have been distinctly traceable to bad drainage and defective traps, and as these serious defects of drainage have in previous reports been pointed out by the Medical Officer of Health, a very serious responsibility is incurred by those whose duty it is to insist on their removal.

Diphtheria (6 deaths) was somewhat prevalent in the Lynesack district, where its continual presence is attributed to the impure surface water supply.

Diarrhœa caused 26 deaths (7 at Crook), and was especially fatal among young children. Three of the seven deaths from Scarlet Fever occurred at West Auckland.

General Sanitation.

The need of a proper water supply for the Lynesack and Softley Townships (especially Lands Bank) is pointed out, but the matter is receiving the consideration of the Authority. Of 10 well waters analysed at West Auckland seven were polluted, and the wells were therefore closed. Fir Tree village is very badly supplied with water as a result of the closing of the village well owing to gross pollution. The report recommends the periodical analysis of all well waters used for drinking purposes.

At West Auckland two insanitary houses are reported, and at Sunnybrow some of the colliery rows are still in a very insanitary condition. Absence of, or defective and insanitary privy accommodation are stated to exist at several rows in Sunnybrow, and at West Auckland the removal of excrement and house refuse is said to be very badly performed, and it is strongly recommended that the Sanitary Authority should themselves undertake this work.

Defects of drainage are reported at New Street and in other parts of West Auckland, and at Copeland Row, Evenwood. At Crook several drains have been relaid and trapped, but it is recommended that the drains of this village should be regularly flushed by automatic flushing tanks. Many of the back streets of Crook appear to be in a very insanitary state. Serious defects of sewage disposal are referred to at Hamsterley, West Auckland, Sunnybrow, and Witton-le-Wear, and in nearly every instance serious

river pollution results. At Witton-le-Wear the laying down of sewage disposal works is being considered by the Authority. At Thistle Flat and High Beechburn the privy accommodation and drainage have been greatly improved.

The ventilation of the Common Lodging-houses is said to be insufficient, and the report recommends that bye-laws regulating the cubic space in Cowsheds should be adopted. No unsound meat was detected during the year.

881 notices for the abatement of nuisances have been served.

Sanitary Requirements.

1. The adoption of the Notification Act and the erection of a suitable Isolation Hospital.
2. The frequent and systematic removal of excremental and house refuse by the Sanitary Authority.
3. The trapping of house drains (especially at Crook) and the removal of the nuisances arising from insanitary houses, sewage disposal, etc., mentioned in the report.
4. The adoption of Bye-laws for the whole district under the Dairies and Cowsheds Orders appears to be necessary.

CHESTER-LE-STREET UNION.

D. DUNCAN, M.B., L.S.Sc., Medical Officer of Health.

Area in Acres, 34,869.	Estimated Population, 1893, 52,250.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
40·4	20·8	4·7	177.

Phthisis death-rate, 1·2. Respiratory diseases death-rate, 2·9. The zymotic and infantile death-rates are both very high.

Infectious Diseases.

842 cases were notified, a large increase in number when compared with 1892. The most prevalent diseases were Enteric Fever (353 cases and 37 deaths) and Scarlet Fever (331 cases and 12 deaths). The most serious prevalence of Enteric Fever was at Chester-le-Street, where 70 houses were infected, to 63 of which the drinking water is stated to have been supplied by the Chester Water Co. This water is obtained from the Stanley Burn, a grossly polluted stream, and the disease appears without doubt to have been caused and disseminated by the drinking of this polluted water when specifically contaminated with the contagium of Enteric Fever. Legal proceedings were taken to prevent the supply being used for drinking purposes, but they were not successful. Typhoid Fever was also prevalent at Craghead, Andrew's Houses, and Fatfield, and in each instance the disease appears to have resulted from the drinking of polluted water.

Diarrhoea (including Gastro-Enteritis) caused 145 deaths, 127 of which were of children under 5 years of age. Dr. Duncan says truly, "I have no 'doubt one of the chief causes of summer Diarrhoea is 'the polluted sub-soil caused by soakage from un-'cemented ashpits and privies, and from the open 'channels which are generally laid on the earth instead 'of a cement bed."

There were 30 cases of Small-pox notified with 5 deaths. Most of the cases were isolated in Hospital as soon as possible.

33 cases were removed to the temporary iron Isolation Hospital during the year (19 of Small-pox and 14 of Enteric Fever). It is pointed out that in stormy weather the Hospital is not weather-proof, and moreover that two separate diseases cannot with safety be isolated therein if a small-pox case is being treated. A permanent Hospital and a Disinfecting Apparatus are recommended.

General Sanitation.

At Chester-le-Street, Usworth, Craghead, Washington, etc., a number of houses have been dealt with under the Housing of the Working Classes Act, and the majority have either been made fairly sanitary or else closed. At Washington Staithes and Pelton a number of insanitary houses have not been improved. A great difficulty arises in the closing of insanitary houses owing to the want of house accommodation for the displaced tenants.

A pure water supply has been laid on to Andrew's Houses and to most of the houses in Usworth. The water supplied by the Consett Co. was of very bad quality during the summer, and indirectly the cause of much disease owing to persons drinking polluted water in preference to that supplied by the water company. A better supply of water is needed at Low Flatts. At Birtley and Edmondsley large sewage schemes have been completed, but

nothing further has been done with regard to the disposal of the sewage of Sacriston and Witton Gilbert, which is greatly in need of attention. Steps are being taken to prevent the pollution of the Stanley Burn at Alma Pit Houses and Boundary Cottages, while the Authority has under consideration schemes for the disposal of sewage at No Place, Andrew's Houses, Chowdean, and Chester-le-Street.

Sewage disposal schemes are very necessary, and are recommended for the Usworth and Washington districts, for the Pelton and Ouston districts, and for Waldridge.

The sewers in the district could not be regularly flushed owing to the want of water, and complaints of nuisances from the ventilators were common. New Bye-laws have been adopted, but still await the consent of the Local Government Board, and an additional Inspector has been appointed.

Sanitary Requirements.

1. A Steam Disinfecting Apparatus and additional (permanent) Hospital accommodation.
2. A proper water supply at Low Flatts.
3. Proper systems of sewage disposal for the Washington, Usworth, Witton Gilbert, Sacriston, Pelton, Ouston, and Waldridge districts.
4. The enforcement of the sanitary powers of the Authority with regard to nuisances, insanitary property, etc.

DARLINGTON UNION.

CHARLES M. HARDY, M.B., Medical Officer of Health.

Area in Acres, 42,034.	Estimated Population, 1893, 9,367.
Birth-rate.	Death-rate.
29·7	14·7

Zymotic-rate. Infant Mortality-rate.

1·4 125

Phthisis death-rate, 0·5 ; Respiratory diseases death-rate, 1·8. The above figures, though higher than for 1892, are satisfactory, and are below the rates in the other rural districts of the county.

Infectious Diseases.

51 cases were notified, including 14 of Scarlet Fever and 16 of Typhoid Fever. The most fatal zymotic disease was Diarrhoea with 7 deaths, while Membranous Croup and Typhoid Fever each caused 3 deaths. There was no epidemic prevalence of any infectious disease during the year. The Rural Authority have the use of the Darlington Borough Fever Hospital and Disinfecting Apparatus, and 5 cases were removed to the hospital. Disinfection of infected houses is in most instances performed by the Inspector of Nuisances with very satisfactory results. Influenza was prevalent towards the end of the year.

General Sanitation.

The district has been regularly inspected, and is stated to be in very fair condition. The water supply is fairly satisfactory, and most of the wells at Hurworth Place have been closed on account of pollution, the water supply of the Stockton and Middlesbro' Company being substituted. The sewers have been regularly flushed, and at Low Coniscliffe a

new main drain and a new cesspool have been constructed which have no connection with the river. Attention has also been given to Dairies, Cowsheds and Slaughter-houses, and milk sellers require to be registered. No case of unsound meat came under notice.

Sanitary Requirements.

None mentioned.

DURHAM UNION (Eastern District).

W. A. HEPBURN, M.D., Medical Officer of Health.

Area in Acres, 15,324.	Estimated Population, 1893, 14,789.
Birth-rate.	Zymotic-rate.
38·8	22·3

Infant Mortality-rate.

1·9

200

Phthisis death-rate, 1·6; Respiratory diseases death-rate, 3·7. The general death-rate, as well as the infant mortality-rate, are both high, and much above the average.

The Medical Officer of Health is of opinion that the high death-rate is to some extent the result of an under estimated population.

Infectious Diseases.

91 cases were notified, the most prevalent disease being Scarlet Fever, (50 cases). There were 11 cases of Typhoid Fever, with 2 deaths, both at Pittington.

The water at High Pittington was analysed, and was stated to be satisfactory. There were 11 deaths from Diarrhoea, and special precautions were taken at the time of the feared introduction of Asiatic Cholera, careful attention being given to the removal

of night soil, house refuse, etc. 2 cases of Scarlet Fever were removed to the Isolation Hospital at Houghall. The erection of a portable hut for the reception of Small-pox cases is recommended by the Medical Officer of Health.

General Sanitation.

A large number of houses have been dealt with under the Housing of the Working Classes Act. At the Cross Rows, Ludworth Colliery, the back-to-back houses have been provided with through ventilation, and through ventilation has also been provided for some of the houses at Gilesgate Moor. At New Durham, Gilesgate Moor, and the Pittingtons great improvements have been made in the sanitary condition of the houses, and improved privy accommodation has been provided.

At the Pittingtons 7 obstructive houses have been pulled down, as have also several ruinous houses at Shincliffe, Shincliffe Colliery, and West Hetton Rows, Coxhoe. The water of several wells has been analysed during the year, and those polluted have been closed. The Old Quarrington water supply has been improved and protected from pollution. The sewers of the district have been frequently flushed and disinfected, and improvements in sewerage have been carried out at High Pittington; Quarrington Hill; Elemore Vale; Sunniside Row, Ludworth Colliery; and Coxhoe; and the outfall sewer at the east end of Sherburn Village has been removed further away from the houses at Sherburn Mill.

Plans and estimates have been prepared for an improved system of sewerage and sewage disposal at Ludworth Colliery, and a new surface channel is to be laid down at East Hetton Colliery. The Surveyor has also been instructed to prepare plans and estimates for new sewers and sewage purification works for Littletown, Gilesgate Moor, Shadforth, Carrville, Belmont, Broomside, and The Grange. 502 written notices were served for the abatement of nuisances, and in 7 instances of non-compliance, legal proceedings were instituted.

Sanitary Requirements.

- i. A portable Hospital for the reception and accommodation of Small-pox cases.

DURHAM UNION (Western District).

E. JEPSON, M.D., Medical Officer of Health.

Area in Acres, 17,582.	Estimated Population, 1893, 19,159.
Birth-rate.	Zymotic-rate.
34·8	16·3

2·7

178

Phthisis death-rate, 1·2 ; Respiratory diseases death-rate, 2·6. The general death-rate is very satisfactory. The report points out that Consumption is very prevalent in the Tudhoe District, and attributes the fact "to the badly constructed houses and the "water-logged or ill-drained soil." The number of un-certified deaths (64, or over 20 per cent. of the total) was again very high, and is the result of practice by unqualified medical men.

Infectious Diseases.

316 notifications were received during the

year, which comprised 163 of Scarlet Fever, 50 of Enteric Fever, and 38 of Diphtheria and Membranous Croup. There were also 4 cases of Small-pox, 2 at Bearpark, removed to Hospital, and 2 at Pity Me isolated at home. Every possible precaution was taken, and the disease was fortunately prevented from spreading.

Diarrhoea was very fatal during August and September, and caused 25 deaths, of which 15 were at Tudhoe. Typhoid Fever was prevalent at the same time in the district. Two convictions were obtained for the exposure of persons while in an infectious condition. The Board School at Houghall Colliery has been converted into an Isolation Hospital, containing 2 wards of 5 beds each, and has been found of great service. 13 cases were removed to it, and it is proposed to erect an additional block for Small-pox cases. Dr. Jepson points out the great necessity of a proper Disinfecting Apparatus and of the disinfection of infected houses, which should be performed by a servant of the Authority.

General Sanitation.

Action under the Housing of the Working Classes Act has been taken respecting insanitary houses at Tudhoe Grange, Tudhoe Village, Crossgate Moor, Framwellgate Moor, and Pity Me, and at Low Burn Hall some back-to-back houses have been provided with through ventilation.

A pure water supply has been laid on to the houses at New Butcher Race and Hett Village.

A new sewer has been constructed for the houses at Potter House Row, Pity Me, while the sewerage has been improved at Western Hill and at Hawthorn Terrace, Crossgate. The various sewers are said to have been frequently flushed and disinfected.

The sewage works at Croxdale are to be enlarged, and plans are being prepared for sewage disposal schemes at Sunderland Bridge and Tudhoe Grange.

266 written notices have been issued for the abatement of nuisances, and a number of defective ash-pits and privies have been altered and improved. Legal proceedings to enforce compliance with notices were necessary in six instances.

The Medical Officer of Health recommends that the scavenging in populous districts should be done by contract.

Sanitary Requirements.

1. A proper Disinfecting Apparatus.
2. Disinfection of infected houses by officers of the Sanitary Authority.
3. The removal of excremental and other refuse by the Authority in all populous parts.

EASINGTON UNION.

J. ARTHUR, L.R.C.P., Medical Officer of Health.

Area in Acres, 36,942.	Estimated Population, 1893, 41,099.
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Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
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40·7	22·4	4·9	185.
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Phthisis death-rate, 1·3 ; Respiratory diseases

death-rate, 2·9. The zymotic death-rate is very high, the mortality from Diarrhoea and Enteric Fever being excessive, while the total death-rate and infant mortality-rate are also much above the average.

Infectious Diseases.

The Infectious Diseases Notification Act was adopted in April, and the total notifications received were 1,140. This large number is the result of the extreme prevalence of Scarlet Fever (587 cases and 27 deaths), and Enteric and Continued Fevers (410 cases and 49 deaths). Scarlet Fever was prevalent in many of the colliery villages, notably Seaham, Wingate, Hesledon, and Shotton, and in November 9 cases occurred in the Workhouse. The case mortality of the disease varied from 1 per cent. at Seaham to 13 per cent. at Wingate. Enteric Fever was also extremely prevalent in many parts of the district, especially at Seaham, Hesledon, Murton, and Haswell. The report states that in connection with the prevalence of this disease, no suspicion could be attached to the water or milk supply, but it was most extensive and severe where the houses had enclosed yards attached. 14 cases of Typhus Fever were notified, mostly at Seaham, to which place it was imported from Southwick. The cases were all removed to hospital, and as several of them were first notified as Enteric Fever it appears likely that more cases of the disease occurred than were reported.

There were 33 cases of Diphtheria and Membranous Croup, with 20 deaths, 13 of which were at

Wingate, where the disease was epidemic at the end of 1892. The case mortality was extremely high (over 60 per cent).

Diarrhœa was extremely fatal among young children (75 deaths), especially in the Murton, Seaham, and Hesledon districts, while Measles (22 deaths) was most fatal at Haswell and Murton.

Puerperal Fever caused 11 deaths (4 of which were at Seaham).

During the year the Infectious Diseases Hospital at Easington has proved of great service, and 31 cases were isolated there, including nearly all the cases of Small-pox and Typhus Fever. Disinfectants were distributed gratuitously and houses disinfected "in the more important cases."

General Sanitation.

The district was frequently inspected by the Medical Officer and Inspector, and the midden privies are reported to have been more frequently cleansed than usual, and the sewers were flushed when practicable.

The laying down of new sewers has been carried on to a considerable extent at Haswell, Shotton, Wingate, Station Town, Castle Eden Colliery, and South Hetton, and in several instances settling tanks have been erected to purify the sewage before discharging into water courses. A large number of ashpit-privies have been erected, chiefly in the Haswell, Wingate, and Thornley districts. Many of these structures are not in accordance with the Sanitary

Bye-laws, and it is difficult to understand the advantage of adopting useful Bye-laws if they are not to be enforced. At Trimdon Foundry the water supply was deficient, but this has been remedied. At Easington and Castle Eden Colliery the supply is also very deficient, and the water is carted to these villages or else carried by the inhabitants from long distances. Efforts to procure a pure supply in these villages were unsuccessful. At South Hetton several cases of Enteric Fever were attributed to the drinking of impure water, though there is an abundant supply of good water.

94 houses have been dealt with under the Housing of the Working Classes Act at Thornley, and closing orders obtained in 34 instances, and at Station Town 3 houses have been closed. Many of the houses at South Wingate are very insanitary. At Murton a large number of houses have been put into a more sanitary condition.

60 formal notices have been served by the Sanitary Inspector. Special attention has been given to the Common Lodging-houses (3), Butchers' Shops and Slaughter-houses (48), and Dairies and Cowsheds (49), and all are stated to have been kept in a fair state.

Sanitary Requirements.

1. A proper water supply to Easington and Castle Eden Colliery Villages.
2. The erection of all new privies and ash pits in accordance with the Sanitary Bye-laws of the district.
3. The removal of excremental and house

refuse by the Authority in the more populous districts.

4. Improvement in the sanitary condition of South Wingate.

5. The system of sewage purification by mere subsidence and without filtration cannot purify sewage sufficient for its discharge into water courses.

HARTLEPOOL UNION.

S. GOURLEY, M.D., Medical Officer of Health.

Area in Acres, 18,368.	Estimated Population, 1893, 2,328.
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Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate
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31.8	18.8	4.7	109
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Phthisis death-rate, 0.8 ; Respiratory diseases death-rate, 2.1. The zymotic death-rate was very high, and resulted entirely from the fatal prevalence of Diarrhoea.

Infectious Diseases.

The only cases notified were 3 of Enteric Fever and 1 of Erysipelas, but all the cases of the former disease proved fatal. Two of the three cases resulted from the drinking of impure water. There were 8 deaths from Diarrhoea.

General Sanitation.

Six out of 13 samples of water analysed were found to be polluted and were condemned. At Forty Acres the water supply was polluted, and the public supply has been laid on to each dwelling.

A large number of farmsteads have been provided with new dairies and cowsheds, and others have been put into good order.

The nuisances, mentioned in previous reports,

from the fish manure manufactory and the night-soil dépôt have been removed.

"There is a considerable amount of sanitary work urgently requiring the attention of the Sanitary Inspector, who will need to devote more time to his duties if the district is to be kept in good condition."

About 40 notices have been served for the abatement of nuisances.

Sanitary Requirements.

Several polluted wells appear to require the attention of the Sanitary Inspector.

HOUGHTON-LE-SPRING (Northern Division).

D. S. PARK, F.R.C.S., Medical Officer of Health.

Area in Acres, 8,399.	Estimated Population, 1893, 13,541.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
39·7	22·9	3·7	215

Phthisis death-rate, 1·1; Respiratory diseases death-rate, 3·6. Excepting the zymotic-rate, which is, however, very high, the vital statistics compared very unfavourably with those of 1892. This result is attributed to the epidemic prevalence of Typhoid Fever, Diarrhoea, and Influenza.

Infectious Diseases.

379 cases were notified, a larger number than has been reported in any previous year. Typhoid Fever was the most prevalent disease (192 cases with 23 deaths), while there were 115 cases of Scarlet Fever with 2 deaths, and 45 cases of Diphtheria with 8 deaths. Enteric Fever first became prevalent in August, and was seriously epidemic during the next

three months, the most cases being reported from the Newbottle and West Herrington districts. In the opinion of the Medical Officer of Health the disease resulted from the imperfect scavenging of the district and the breaking into the main sewers during the progress of the new sewerage scheme, conditions which were assisted by the intense heat and drought. At High Warden Law and New Penshaw the disease appears, however, to have been brought into the district by offensive town manure which was probably infected by the Typhoid contagium. The distribution of the disease, as well as the different dates of its prevalence in the various villages, appear to remove all suspicion of the water supply being the cause of the epidemic, and the same may be said of the milk supply. It was noticed that Typhoid Fever was much less prevalent where the midden privies were well removed from the houses. Scarlet Fever was most prevalent in the Newbottle district, the spreading of the disease resulting from the gross neglect of the parents who take no pains to isolate their children. Diphtheria was most prevalent in the Newbottle and West Herrington districts. In most of the houses in which cases occurred there were insanitary conditions, notably dampness, while "there was the usual amount of visiting, which no doubt played a part in the spread of "the disease." Measles was epidemic at Bank Head and Sunniside in September, and during the year it caused altogether 4 deaths. Diarrhoea of a serious type, and affecting old and young, was

very prevalent during July and August, and was fatal in 10 instances. During the first and last quarters of the year Influenza was epidemic, and by increasing the mortality from lung diseases was one of the causes of the increased death-rate.

Every precaution was taken to prevent the spread of infectious disease. All premises from which cases were notified were visited by the Medical Officer of Health, disinfectants supplied, and isolation insisted upon as far as possible. 15 cases of Typhoid Fever were isolated in Hospital. The Authority have adopted the Infectious Diseases (Prevention) Act and the Public Health Amendment Act, 1890.

General Sanitation.

At Old Penshaw, New Penshaw, Shiney Row and New Herrington the houses have been spouted and made sanitary, while at High Warden Law, Newbottle, Shiney Row, and other places new ashpit-privies and other conveniences have been erected. At Newbottle 5 houses have been closed as unfit for habitation. At Shiney Row and New Penshaw many ashpits are in bad condition but steps are to be taken for their improvement. During August and September the scavenging and emptying of ashpits was very badly done, but as the Authority have decided to contract for the scavenging of the whole district, it is to be hoped that this condition of things will not occur again. The new sewerage scheme is being proceeded with and all branch house drains are being properly trapped. The Dairies and Cowsheds (34) and Slaughter-houses

(20) have been kept under careful supervision. Analysis of the water supply show that chemically the water is of good quality, and the milk and meat supplies have also been good. Complaint is made in the report of the introduction of offensive town manure into the district, which in several instances was productive of zymotic disease.

Sanitary Requirements.

1. The insanitary conditions at New Penshaw, Wood-houses, and Shiney Row should be remedied without delay.
2. The removal of excremental and other refuse should be undertaken by the Authority.
3. An additional Sanitary Inspector.
The report is **not** printed.

HOUGHTON-LE-SPRING UNION (Southern Division).

J. R. SUTHERLAND, L.R.C.S., Medical Officer of Health.

Area in Acres, 6,409.	Estimated Population, 1893, 18,900.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
40·5	22·7*	4·07	199

Phthisis death-rate, 1·4; Respiratory diseases death-rate, 3·4. The above mortality-rates are very high, and greatly in excess of those for 1892.

Infectious Diseases.

The number of notifications received was 304, or more than double the number for 1892. Scarlet Fever was the most prevalent disease, and was chiefly confined to the Hetton district. The disease was

*Including 7 deaths in Houghton Workhouse belonging to the district.

generally of a mild type, but there were altogether 8 deaths, 5 of which were in the last quarter of the year, and at Hetton. Of the 83 cases of Typhoid Fever 72 were at Hetton, where the disease appears to have been equally spread over the district. Of the 13 deaths, 10 were in the Hetton district. During the last two years this disease has been exceptionally prevalent in Hetton, and is attributed to the imperfect trapping of the drains and the dry, hot weather. The defects of drainage and sewerage are rapidly being removed, and it is to be hoped that the disease will not again become prevalent. One case of Asiatic Cholera was notified, but careful enquiry showed that the case was one of English Cholera. Diarrhœa caused 28 deaths, its fatality being attributed to the same cause as that of the Typhoid Fever. Measles was prevalent throughout the district, and caused 17 deaths, while Influenza again made its appearance.

One case of Enteric Fever was removed to the new Infectious Hospital during the year, but at present there appears to be a difficulty in getting patients to avail themselves of its advantages.

General Sanitation.

A large number of houses at the Brickgarth have had their sanitary condition greatly improved, but the privy accommodation is still defective. Ashpits have, however, been provided, and facilities are offered for the erection of wooden privies in the gardens.

At Bogg Row a large number of insanitary

houses have been pulled down. In the middle of Hetton the houses are closely crowded together without proper back streets, and many are without proper privy accommodation. It is pointed out that an improvement could be made by the removal of some of the houses, and of the small erections at the backs of others.

Four houses at Murton Lane and three at West Rainton have been closed as unfit for habitation, and others are to be dealt with at Leamside and in West and Middle Rainton.

The insanitary condition of the midden-privies at Johnson's Row, West Rainton, is again referred to. There is a want of spouting at Moorsley, and at Coal Bank Terrace the midden-privies are in a dilapidated condition. At Front Row, Middle Rainton, new ash-pit-privies have been erected, but in the centre of the village many of the conveniences are kept in a filthy and insanitary condition. The emptying and cleansing of ashpits have been badly performed, except in the Hetton district. The water supply to the Stables Farm has been improved, but nothing has been done to improve the supply to the Blue House Farm. The Cowsheds and Slaughter-houses have received attention. In some instances the ventilation and drainage were defective.

Sanitary Requirements.

1. The sanitary improvement of the streets and houses in the Cross Rows, Hetton, and of the houses at Middle Rainton and Moorsley, mentioned in the report.

2. The provision of suitable privy accommodation at Brickgarth and at other places where it is deficient.

3. The removal of the insanitary midden-privies at Johnson's Row, West Rainton, to a more suitable position.

4. More efficient scavenging and removal of excremental matter (excepting Hetton).

The report is **not** printed.

LANCESTER UNION (Medomsley Division).
W. T. BOLTON, L.R.C.P., Medical Officer of Health.

Area in Acres, 21,213.	Estimated Population, 1893, 7,435.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
34·4	15·1	1·6	93

Phthisis death-rate, 1·7; Respiratory diseases death-rate, 2·0. The above statistics, and especially the infant mortality-rate, are very satisfactory.

Infectious Diseases.

103 cases were notified, which is a slight increase when compared with 1892. Scarlet Fever was the most prevalent disease (52 cases), especially in Medomsley (40 cases).

There were 11 cases of Small-pox, 6 of which were in Medomsley and 5 in Healey Field. There were 13 cases of Enteric Fever and 3 deaths (no details given), and 5 deaths from Diarrhoea.

Five cases of Small-pox were removed to the Isolation Hospital at Leadgate, but there is no Disinfecting Apparatus for the district.

General Sanitation.

The water supply from the Consett Company

was unsatisfactory during the summer. One polluted well at Blackall Mill has been closed.

No action was required under the Housing of the Working Classes Act.

In the colliery villages the scavenging and removal of refuse is reported to be well carried out.

"The main sewers are all in good order, and "frequently flushed."

The milk and meat supplies are stated to be good and wholesome, while the condition of Dairies, Cowsheds, and Slaughter-houses appears to be satisfactory.

Sanitary Requirements.

None referred to, but it is desirable that in the more populous districts, the Authority should undertake the responsibility for the cleansing and emptying of the ashpit-privies.

LANCHESTER UNION (Lanchester District).

JOHN WILSON, M.D., Medical Officer of Health.

Area in Acres, 29,956.	Estimated Population, 1893, 16,419.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
39·4	20·0	3·5	126

Phthisis death-rate, 1·2; Respiratory diseases death-rate, 5·0. The zymotic and respiratory diseases death-rate are both very high, and for the last three years the latter death-rate has exceeded 5·0 per 1,000.

Infectious Diseases.

The number of notifications received (468) were much above the average. Scarlet Fever (341 cases and 10 deaths), Typhoid Fever (55 cases and 15 deaths),

Diphtheria and Membranous Croup (17 cases and 12 deaths), and Diarrhoea (20 deaths), were all fatally prevalent.

Scarlet Fever was distributed all over the district, and Dr. Wilson remarks "that this is bound to continue so long as there is no hospital to isolate the sick from the healthy. The largest number of inhabitants of this district are pitmen, and it is altogether out of the question to expect that in a four or three-roomed house separation can be effected." The Lanchester school was closed for a month owing to the prevalence of this disease.

During September Typhoid Fever became epidemic at Esh Winning, while several cases were reported from Wagtail Cottages, Craghead. At the latter place no sanitary defects were discovered, and except that the surface channels were not satisfactory and the covered drains untrapped, there were no special sanitary defects at Esh Winning. The milk and water supply were both beyond suspicion, and the disease is attributed to the long dryness of the weather.

Though there were 9 deaths certified from Membranous Croup only 6 of them were notified to the Medical Officer of Health prior to death. The probable causes of this disease and Diphtheria and the sanitary condition of the infected houses are not referred to.

Two cases of Small-pox at Happy Land were removed to the Leadgate Fever Hospital, as were also two cases of Enteric Fever.

General Sanitation.

A pure supply of water has been provided for East Hedleyhope village, and at Cornsay village the wells have been protected from pollution.

At Cornsay a house has been closed as unfit for habitation, and at Burnhope several houses have been enlarged and improved, but on the east side of the village some houses are in need of spouting.

New sewers and sinks have been constructed at Burn Moor, Esh Winning, Happy Land, and Langley Park. At Esh Winning the sewage disposal works have been completed and are very satisfactory, and similar works are in contemplation at Burn Moor.

At Quebec the ashpits are in a bad condition, and Dr. Wilson points out the importance of covering over all the midden-privies, as the effect of sunshine and moisture necessarily hastens decomposition and causes a nuisance.

The emptying of the ashpits appears to be well attended to.

The Cowsheds in the district are said to be in a fair sanitary condition.

Sanitary Requirements.

1. A permanent Isolation Hospital and Disinfecting Apparatus.
2. The covering over of all open midden-privies, and the improvement in the sanitary condition of those at Quebec village.

LANCESTER UNION (Stanley Division).

T. BENSON, L.R.C.P., Medical Officer of Health.

Area in Acres, 9,543.	Estimated Population, 1893, 15,000.
Birth-rate.	Death-rate.
39·8	21·5

Zymotic-rate. Infant Mortality-rate.

3·1 194

Phthisis death-rate, 1·2 ; Respiratory diseases death-rate 3·2. The above mortality statistics compare very unfavourably with those for 1892. The general, zymotic, and infant mortality rates being very much higher.

Infectious Diseases.

254 cases, or 34 less than in 1892, were notified, and included 157 cases of Scarlet Fever (4 deaths), 39 cases of Diphtheria and Membranous Croup (12 deaths), and 35 cases of Typhoid Fever (4 deaths).

Scarlet Fever, though occurring in almost every village, nowhere assumed epidemic proportions ; the persistence of the disease is said to result from the parents refusing to allow their children to be removed to an Infectious Hospital, where effectual house isolation is impossible.

Diphtheria was almost wholly confined to East Castle, where, with one exception, all the cases occurred. The disease first attacked a girl attending school in an adjoining district, but apparently no medical attendant was called in till several cases had occurred. During the continuance of the outbreak the children from the village were not allowed to attend school, and the epidemic finally abated in June.

The cases of Enteric Fever were scattered over the district, but the disease was nowhere epidemic.

At East Castle its prevalence was attributed to pollution of the subsoil by filth from uncemented midden-privies, and at Kyo it probably resulted from the drinking of impure well water.

Diarrhœa was very prevalent towards the end of the summer, and caused 24 deaths.

There was no case of Small-pox reported during the year, though the hospital at Leadgate was specially reserved for such cases. A large house was also secured for isolation purposes in case the permanent hospital accommodation was insufficient. The hot air disinfecting apparatus available for the district is said to be a very crude one.

General Sanitation.

Four houses at Burnopfield have been closed under the Housing of the Working Classes Act, and others in that village and at Lintz Colliery, Friarside, Hill Top, and Dipton have had their sanitary condition much improved. A good deal of spouting has been erected to houses throughout the district, "but "there is much room for further improvement."

A constant water supply has been laid on to Logan Houses, Shipley's Houses, and the lower end of West Kyo. The Consett Water Company's supply was during the past summer very bad in quality.

New and well ventilated sewers have been constructed at Annfield Plain, Catchgate, Kyo, and Harelaw, all gravitating to one outlet at Kyo. 586 houses have been provided with new drains discharging into new sewers.

The sewage of the Burnopfield district has mostly been disposed of by surface irrigation, while the sewage disposal works at Tantobie have worked very satisfactorily.

Plans have been prepared for the disposal of the sewage of the Annfield Plain district.

A large number of new ashpit-privies have been erected throughout the district, and many others have been repaired. The emptying of the midden-privies has been fairly well attended to.

The Dairies, Cowsheds, Slaughter-houses, and Common Lodging-houses all appear to have been kept in fair order, though a more efficient removal of offal from slaughter-houses is desirable.

Legal proceedings were successfully instituted in six instances for the non-abatement of nuisances.

Sanitary Requirements.

1. A more efficient Disinfecting Apparatus.
2. Spouting of the houses wherever necessary.

SEDGEFIELD UNION.

G. R. SHERATON, L.R.C.P., Medical Officer of Health.

Area in Acres, 45,243.	Estimated Population, 1893, 18,640.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
38·3	20·1*	3·2	189

Phthisis death-rate, 1·5; Respiratory diseases death-rate, 2·5. The zymotic and infant mortality-rates were both much above the rates for last year.

Infectious Diseases.

The Infectious Diseases Notification Act came into force in May, from which time to the end of the

*Exclusive of the deaths of 160 persons in Sedgefield Asylum.

year 23 notifications were received, the most prevalent diseases being Typhoid Fever (94 cases), Scarlet Fever (55 cases), and Continued Fever (53 cases).

There were two cases of Small-pox during the year, one at Fishburn and the other at the Asylum. The precautionary measures adopted prevented any spread of the disease.

The Scarlet Fever cases were generally of a mild type (only 3 deaths). Prompt and energetic action was taken to prevent the spread of the disease.

9 of the 10 cases of Diphtheria occurred at Cornforth. There were altogether 6 deaths from the disease, which appeared to have resulted from insanitary surroundings.

Typhoid Fever was chiefly confined to the Trimdon Grange and Trimdon Colliery districts. At Trimdon Colliery the disease was possibly caused by the consumption of impure water, but at Trimdon Grange the disease was probably imported. At Low Spennymoor 5 cases of the disease were undoubtedly due to defective drainage. The cases of Continued Fever were probably mild cases of Typhoid Fever. Influenza of a mild type was prevalent during the last quarter of the year.

Nothing definite has been done towards the provision of an Isolation Hospital, and the matter is still under the consideration of the Board.

General Sanitation.

A proper supply of water is imperatively demanded at Trimdon village. During the year a

supply has been provided for Trimdon Colliery. The public wells in the district have been kept in good order. New sewers have been constructed at Sedgefield, Cornforth, and Trimdon, while house drainage has been much improved by the substitution of gully traps for open grates.

The Common Lodging-houses (3 in number) have been kept in good condition.

265 notices have been served for the abatement of nuisances, and in one instance legal proceedings were resorted to. "The nuisances at the Mainsforth "Rows, Chilton Lane, still continue to exist, which "demand the attention of the Board."

The cleansing of the ashpits in the Cornforth township is very badly performed, and should be undertaken by the Sanitary Authority.

Sanitary Requirements.

1. The provision of an Isolation Hospital and Disinfecting Apparatus.

2. A proper water supply for Trimdon village.

3. The removal of nuisances at Mainsforth Rows.

4. The removal of excrement and house refuse by the Sanitary Authority in all populous districts, and especially in the Cornforth district.

SOUTH SHIELDS UNION.

J. GRANT, M.D., Medical Officer of Health.

Area in Acres, 12,409. Estimated Population, 1893, 12,382.

Birth-rate. Death-rate. Zymotic-rate. Infant Mortality-rate.

37·2

21·7

5·1

171

Phthisis death-rate, 2·3 ; Respiratory diseases death-rate, 3·0. The death-rate and zymotic rate are both very high, the result to a great extent of the fatal prevalence of Enteric Fever and Diarrhoea.

Infectious Diseases.

183 cases were notified, comprising 67 of Scarlet Fever and 49 of Typhoid Fever.

There were 10 cases of Small-pox notified, of which 5 occurred in the Workhouse. 4 in the Boldon district and 3 from the Workhouse were removed to the South Shields Fever Hospital.

Typhoid Fever was most prevalent in the Boldon and Whitburn districts, and caused 10 and 8 deaths respectively. The mortality was extremely high, being nearly 50 per cent. of the cases notified. No special reference is made in the report to the probable causes of the disease, though at Marsden Colliery, in the Whitburn district, it probably resulted from the drinking of polluted water.

Diarrhoea caused 23 deaths, 11 of which occurred in the Boldon district.

In addition to the cases of Small-pox, 3 cases of Scarlet Fever were isolated in hospital. Owing to the prevalence of Measles in East Boldon, the schools were closed for one month in February with good results.

General Sanitation.

Two insanitary houses at Chick Lane, Whitburn, and 11 at White Mare Pool have been dealt with under the Housing of the Working Classes Act.

At White Mare Pool there have been some repairs made, although the houses are still far from satisfactory. Prosecutions were also instituted under the Act with regard to 3 houses at Boldon Bank, but they were for the time withdrawn. Further improvements at Scott's property, Harton, have been carried out, but they are not yet completed, and at Elder's Buildings, Whitburn, some of the middens have been converted into improved ash-closets. The sanitary condition of Marsden Colliery village has been greatly improved, and a pure water supply has been substituted for the previously existing supply. The outfall sewer has been carried out to sea below low water mark. The removal of refuse and the emptying of ashpits has been contracted for by the Sanitary Authority, and the work as a result has been much better done.

The Dairies, Cowsheds, and Slaughter-houses were inspected during the year, and with the exception of 3 cowsheds where the drainage was defective, were found to be fairly satisfactory.

Sanitary Requirements.

None specially referred to, but the insanitary houses at White Mare Pool and elsewhere should be either put into a habitable condition or else closed without further delay.

STOCKTON UNION.

J. W. BLANDFORD, L.R.C.P., Medical Officer of Health.

Area in Acres, 34,228.

Estimated Population, 1893, 12,765.

Birth-rate. Death-rate.

Zymotic-rate. Infant Mortality-rate.

29.9

14.1

2.6

99

Phthisis death-rate, 0·7 ; Respiratory diseases death-rate, 1·7. Except for the zymotic-rate, which is rather higher, the above statistics compare favourably with those for 1892, and are very satisfactory.

Infectious Diseases.

Of the 91 cases notified, 45 were of Enteric Fever and 25 of Scarlet Fever. There were 16 deaths from Enteric Fever, 11 of which were in the Norton district. In October and November the disease was "epidemic chiefly over the area supplied " by water from the Stockton and Middlesbrough Water "Board Mains."

Scarlet Fever never became epidemic, and was fatal in no instance.

At Wolviston several cases of Diphtheria appear to have resulted from the inhalation of dust infected by the excrement and discharges of fowls suffering from gapes. Unfortunately a bacteriological examination of the fowls for the Diphtheria bacillus could not be carried out, owing to the advanced decomposition of the bodies.

At Haverton Hill and Wolviston the schools were closed owing to the epidemic prevalence of Measles.

Diarrhoea was responsible for 13 deaths, and was especially fatal at Haverton Hill. 4 cases of Scarlet Fever and 5 of Enteric Fever were removed to the Middlesbrough Fever Hospital owing to want of proper isolation at home. All cases of infectious disease notified are visited either by the Medical

Officer of Health or the Inspector, and all necessary precautions insisted upon.

General Sanitation.

A large number of middens have been abolished and replaced by small ash-closets which are regularly scavenged weekly and a great sanitary improvement. The report points out that the scavenging would be facilitated and the sanitary condition improved if similar action was taken with regard to the old-fashioned midden-privies at the Carlton Iron Works.

The sanitary condition of Haverton Hill and Norton has been greatly improved by the making of the streets.

Owing to the dry weather, many of the places supplied by wells suffered from a scarcity of water, and at the villages of Cowpen and Newton Bewlay there was quite a water famine.

At the Carlton Iron Works the water supply is very unsatisfactory, owing to deficient distribution, the number of stand pipes being much too small.

The sewers have been extended and relaid in several villages, notably at Wolviston and Billingham, and as far as possible they have been flushed and disinfected throughout the district, but during the summer foul smells were frequently emitted from the ventilators.

The scavenging of the district is mostly done by contract and is satisfactory, and during the year the scavenging of Eaglescliffe was undertaken by the Authority.

All the milk sellers have been registered under the Dairies and Cowsheds Orders. The Cowsheds in many instances have been enlarged so as to comply with the bye-laws as to cubic space, and the importance of their careful supervision is pointed out.

The Slaughter-houses are not all registered.

Sanitary Requirements.

1. An improvement in the distribution of the water supply to the Carlton Iron Works, and a more copious and better supply should be provided for Cowpen and Newton Bewlay and similar places, if possible.
2. The old-fashioned midden-privies in the Whitton district might with advantage be replaced by improved ash-closets.
3. All Slaughter-houses should be registered and kept under proper supervision.

SUNDERLAND UNION.

T. COKE SQUANCE, M.D., L.S.Sc., Medical Officer of Health.

Area in Acres, 7,404.		Estimated Population, 1893, 18,244.
Birth-rate.	Death-rate.	Zymotic-rate.
41.1	22.8	3.8

176

Phthisis death-rate, 1.3 ; Respiratory diseases death-rate, 3.7. The general and zymotic death rates were both high and much above the average, a result chiefly due to the increased mortality from Enteric Fever and Diarrhoea ; and in the case of the general death rate, to the large increase in the number of deaths from diseases of the Nervous System.

Infectious Diseases.

297 cases were reported under the Notification Act, including 108 of Scarlet Fever and 128 of Enteric and Continued Fevers.

The prevalence of Scarlet Fever appears to result from the parents neglecting to take any precautions to prevent the spread of the disease, and it is pointed out that even the medical attendant is sometimes to blame in not insisting on isolation and the non-attendance at school of patients suffering from this disease. The report mentions one instance where the medical attendant advised that a healthy child should be made to sleep with one suffering from Scarlet Fever.

Typhoid Fever, though very prevalent, appears to have been scattered generally over the district. As to the cause of this disease, Dr. Squance remarks that "the abnormally dry and hot summer appeared to be "the determining factor, in conjunction with prejudicial "conditions set up in the colliery villages by the "presence of privy-middens, and from the fact that "their contents when emptied are deposited on the "road." The storing of water for drinking purposes in houses—a practice common in some colliery districts—may in some cases have been the means of spreading the disease, the germs of which may have been carried by dust, etc., into the water. There were altogether 12 deaths from Enteric Fever.

Diarrhoea was very fatal, causing 40 deaths, its prevalence being attributed to the same causes as those of Enteric Fever.

The Sunderland Borough Fever Hospital is no longer available for use by the Authority, and a site has therefore been procured in the centre of the district for the erection of a permanent Isolation Hospital, "and it is to be earnestly hoped that the "long-needed hospital may become an accomplished "fact."

Special precautions were observed against the introduction of Small-pox and Cholera.

General Sanitation.

The sanitary condition of Ryhope has been greatly improved, and many serious sanitary defects mentioned in last year's report have been remedied. The fact that many insanitary conditions are due to the filthy habits of the tenants is pointed out. The constant danger arising from the existence of midden-privies is referred to, and it is recommended that as far as possible small ash-closets should be substituted.

At Ford 10 houses have been closed by Magistrates' order, "and during the present year more "old property will have to be dealt with."

During the year the quality of the water has been good. The nuisance at Fulwell arising from the escape of sewer gas has been obviated by the erection of a ventilating shaft.

The farms throughout the district are stated to be in a very good sanitary condition. Bye-laws have been confirmed under the Dairies and Cowsheds Order.

177 notices have been served during the year for the abatement of nuisances.

Sanitary Requirements.

1. The removal of nuisances arising from insanitary midden-privies.
2. The erection of a permanent Isolation Hospital.

The report contains some very useful charts showing the number of cases and monthly prevalence of Infectious diseases.

TEESDALE UNION (Middleton Division).

J. ATKINSON, L.R.C.P., Medical Officer of Health.

Area in Acres, 40,897. Estimated Population, 1893, 3,804.

Birth-rate. Death-rate. Zymotic-rate. Infant Mortality-rate.

31·5	19·4	0·78	116
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Phthisis death-rate, 1·0; Respiratory diseases death-rate, 3·4. Except for the general death-rate which is rather high for a rural district, the above statistics are satisfactory.

Infectious Diseases.

The Notification Act is not in operation, and only 6 cases of infectious disease came specially to the knowledge of the Medical Officer of Health. Measles was prevalent throughout the district and caused 2 deaths, and the only other death from zymotic diseases was one from Enteric Fever at Eggleshope.

The Medical Officer of Health strongly recommends the adoption of the Infectious Diseases (Notification) Act.

The district appears to be without any Isolation Hospital.

General Sanitation.

All the Lead Mine-shops have been visited during the year, and in several of them the lighting and ventilation were bad and there was serious overcrowding. The report recommends that notice should be served on the Lead Companies that they must allow at least 300 cubic feet air space for each person sleeping in the Mine-shops.

A new sewer has been provided for the lower end of Eggleston village, and the report states that proper sanitary drains are required for many parts of Middleton in place of the old stone drains.

Dr. Atkinson strongly recommends that the Authority should undertake the cleansing of ash-pits at Middleton and Eggleston, and also have the refuse farther removed from the houses than is often the case at present.

The only Common Lodging-house is satisfactory, and the condition of the Dairies and Cowsheds is gradually improving, but the Slaughter-houses are not registered, and consequently many of them are unknown to the Medical Officer of Health.

Sanitary Requirements.

- / 1. The adoption of the Notification Act.
- 2. Increase in the ventilation, lighting, and cubic space of the Mine-shops.
- 3. Improved drainage at Middleton.
- 4. The cleansing of middens and the removal of refuse by the Authority at Middleton and Eggleston.
- 5. The registration of all Slaughter-houses.

TEESDALE UNION (Barnard Castle Division).

A. H. SEVIER, M.B., Medical Officer of Health.

Area in Acres, 13,636.	Estimated Population, 1893, 1,004.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
18·0	13·0	nil.	166

Phthisis death-rate, 1·0; Respiratory diseases death-rate, 3·0. The above statistics are satisfactory, and for the second year in succession there has been no death from zymotic diseases.

Infectious Diseases.

The only cases that came to the knowledge of the Medical Officer of Health were a few of Scarlet Fever, Measles, and Diarrhoea, but Influenza was epidemic towards the end of the year, and increased the death-rate from lung diseases.

General Sanitation.

The sanitary condition of the district has been kept under careful supervision. A new and improved system of sewerage is under consideration for Startforth.

The Dairies and Cowsheds have been kept in a satisfactory condition.

No action has been called for in connection with workshops and factories.

Sanitary Requirements.

None mentioned.

TEESDALE UNION (Staindrop Division).

JAMES BEATTIE, L.R.C.P., Medical Officer of Health.

Area in Acres, 25,494.	Estimated Population, 1893, 6,202.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
39·5	16·4	1·1	151

Phthisis death-rate, 0·4 ; Respiratory diseases death-rate, 1·7. The death-rate is much lower than last year, and for a partly mining district is fairly satisfactory.

Infectious Diseases.

The Notification Act is not in operation, but its adoption is strongly recommended.

13 cases of Scarlet Fever (12 in Woodland) came to the notice of the Medical Officer of Health, but the precautions adopted prevented the disease from becoming epidemic in part of the district.

One case (a death) from Diphtheria occurred near Cockfield, the disease being contracted outside the district.

The only case of Enteric Fever known was one at Cockfield in a house with no sanitary defects.

Measles was epidemic at Woodland at the beginning of the year (1 death), while Diarrhoea was very prevalent during the summer, causing 5 deaths (4 at Cockfield). The district is without any Isolation Hospital.

General Sanitation.

Several new houses have been built at Cockfield, where increased house accommodation is greatly needed. At Woodland there appear to be several houses in an insanitary condition owing to want of privy accommodation, spouting, and proper water supply. The removal of excrement and other refuse at Cockfield is stated at times to be unsatisfactory. The pollution of the Tees by the sewage of Gainford and Staindrop is

mentioned, and some better system of sewage disposal for these places is advised. An excellent supply of water has been laid on to Woodland during the year. The Slaughter-houses are not registered, and the Medical Officer of Health recommends that this should be done.

Sanitary Requirements.

1. The adoption of the Notification Act and the provision of an Isolation Hospital.
2. The prevention of the pollution of the Tees by sewage.
3. The removal of excrement and house refuse by the Authority in all populous districts.
4. The registration of all Slaughter-houses.
The report is **not** printed.

WEARDALE UNION (St. John's Division).

C. C. HEWITSON, M.R.C.S., Medical Officer of Health.

Area in Acres, 36,096.	Estimated Population, 1893, 3,420.		
Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
21·9	15·7	0·8	93

Phthisis death-rate, 3·2; Respiratory diseases death-rate, 2·3. While the death-rate practically remains the same, there is considerable improvement in the zymotic and infant mortality rates when compared with those for 1892. The death-rate from Phthisis is extremely high.

Infectious Diseases.

The Notification Act is not in operation.

5 cases of Scarlet Fever (3 cases with one death at Sidehead) were ascertained. There were also

three cases of Enteric Fever, two of which were imported from other districts. Two of them (1 at Killhope and 1 at Sidehead) proved fatal, and at Sidehead insanitary conditions existed.

Influenza was prevalent, and of a severe type, towards the end of the year, causing 2 deaths.

General Sanitation.

Some new privy accommodation has been provided at Lanehead and at St. John's. The sanitary condition of Ireshopeburn farm premises, and of the Police Station, has been improved.

A new pure water supply has been laid on to Wearhead, a village of 300 population, and to the Board School.

General and special inspections of the district have been made, and notices for the abatement of nuisances are stated to have been served where necessary.

Sanitary Requirements.

i. The adoption of the Infectious Diseases (Notification) Act.

The report does not state whether the defects of sewerage and in connection with the Cowsheds, mentioned in last year's report, have been remedied.

WEARDALE UNION (Wolsingham Division).

T. V. DEVEY, L.R.C.P., Medical Officer of Health.

Area in Acres, 24,036.	Estimated Population, 1893, 3,235.
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Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
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32.7	16.0*	0.9	94
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*Excluding 4 deaths of persons not belonging to the district, the total death-rate was only 14.8.

Phthisis death-rate, 0·7 ; Respiratory diseases death-rate, 3·1. The above statistics are very satisfactory. The death-rate is 1·5 per 1,000 lower than in 1892.

Infectious Diseases.

The Notification Act is not in operation, and there is no Isolation Hospital. The report points out that a joint hospital for Tow Law and Wolsingham would be very useful.

There have been 3 cases of Scarlet Fever in the district, and 1 death each from Enteric Fever and Erysipelas, and 2 from Measles.

General Sanitation.

Many yards have been paved or cemented, and several ashpit-privies have been made more sanitary. Three houses in a dangerous condition have been pulled down and are being re-built.

A pure water supply has been laid on to 22 houses in Wolsingham, and one "shallow" well has been closed.

The supply to Thornley is not satisfactory, as it is liable to serious pollution at present.

The sewers have been kept in good order, and flushed regularly. The sewage farm at Wolsingham has worked satisfactorily.

Thornley is without any drainage, "and there is a good deal of filth in the open gullies."

The Slaughter-houses (6) and the Dairies and Cowsheds have been kept clean, but many of the latter "want more light and lime-washing."

Sanitary Requirements.

1. The adoption of the Infectious Diseases (Notification) Act and the provision of Hospital accommodation.
2. An improvement in the water supply, drainage, and general sanitary condition of Thornley village.
3. Better lighting and more frequent lime-washing and cleansing of Dairies and Cowsheds.

WEARDALE UNION (Stanhope Division).

W. ROBINSON, M.D., Medical Officer of Health.

Area in Acres, 24,527. Estimated Population, 1893, 2,657.

Birth-rate.	Death-rate.	Zymotic-rate.	Infant Mortality-rate.
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29·7	15·4	0·7	164
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Phthisis death-rate, 1·5; Respiratory diseases death-rate, 2·2. The death-rate is considerably lower than for last year (19·4), but the infant mortality-rate is high. The zymotic death-rate is exclusive of 4 deaths from Croup, which if included would raise the rate to 2·2 per 1,000.

Infectious Diseases.

A case of Small-pox was imported to Crawley-side from Consett, but the disease did not spread. Re-vaccination was performed in several instances.

Four deaths from "Croup" occurred, two at one house at Hill End, where insanitary conditions existed, and one each at Bollihope and Dam Hill, Frosterley.

Measles was imported into Frosterley, in January, and became very prevalent. The schools were

closed for one week in consequence, but fortunately there were no deaths.

General Sanitation.

Systematic house-to-house inspections were made by the Medical Officer of Health and Inspector, and all insanitary conditions noted were reported to the Authority.

Improved drainage has been provided for some houses at Crawleyside and Rookhope, and improved privy accommodation provided for the Church Schools at Crawleyside (ash-closets) and for three houses at Rookhope.

An additional water supply has been brought to Frosterley, and a new supply, good as regards both quality and quantity, has been laid on to Crawley village, the previous one being subject to pollution. The water supply of the whole district is satisfactory. An improvement has been made in the means of flushing the Frosterley sewers. The sewers at Rookhope are flushed from the burn.

Sanitary Requirements.

The following are specially pointed out in the report :—

1. The adoption of the Notification Act.
2. A Disinfecting Apparatus and an Isolation Hospital.
3. Improved sewerage and drainage for Crawleyside and Rookhope.
4. At Frosterley, the provision of privies and ash pits for 4 houses in Gray's Row, and 2 new privies for 4 houses on the Battlement.

5. The prevention of overcrowding in the "Mine Shops."

6. Bye-laws for regulating nuisances and private scavenging, slaughter-houses, cowsheds, and the erection of new buildings.

All these sanitary requirements were pointed out in last year's report.

WEARDALE UNION (Derwent Division).

C. J. CONNON, M.B., Medical Officer of Health.

Area in Acres, 13,144.	Estimated Population, 1893, 523.
Birth-rate.	Death-rate.
24·8	3·8

Zymotic-rate. Infant Mortality-rate.

Nil. Nil.

Phthisis death-rate, Nil; Respiratory diseases death-rate, 3·8. The only deaths registered were those of two persons aged 79 and 75 years.

Infectious Diseases.

The only case known was one of Diphtheria at Sandyford, and this was imported from the Shotley Bridge district by a visitor. The Notification Act is not in operation.

General Sanitation.

At Ruffside the houses are built on the back-to-back principle. The water supply is good, and a new supply for Ruffside was completed during the year.

The old midden-privies of primitive construction are gradually being replaced by more modern conveniences.

The only Slaughter-house is at Edmondbyers, and is kept clean.

"Cowsheds are frequently adjacent to dwellings

and often badly ventilated." Frequent inspections of the district have been made by the Medical Officer of Health and Inspector, which, judging by its mortality statistics, is extremely healthy.

Sanitary Requirements.

None referred to specially, but improvements in the position and construction of Cowsheds are evidently greatly needed.

PART SANITARY DISTRICTS.

RIVER TYNE PORT.

HENRY E. ARMSTRONG, D.Hy., M.R.C.S.,
Medical Officer of Health.

Diseases on Shipboard.—The following cases were reported on arrival in the Tyne as having occurred on vessels :—Small-pox, 7 on voyage and 3 on or after arrival in Tyne ; Diarrhoea, 120 on voyage and 57 on or after arrival ; Enteric Fever, 32 on voyage and 7 on or after arrival ; Malarial Fever, 52 on voyage and 12 on or after arrival ; Dysentery, 25 on voyage and 4 on or after arrival ; Yellow Fever, 14 on voyage ; Diphtheria, 1 on voyage and 3 on or after arrival ; Influenza, 69 cases on voyage.

10 cases of Measles were reported from the Wellesley Training Ship.

51 vessels were visited by the Medical Officer of Health or his assistant on account of known cases of sickness aboard, and 26 cases were admitted to the Floating Hospital.

Vessels Inspected.—The number of vessels inspected by officers of the Port Sanitary Authority was 11,327, and of these 2,091 came from foreign ports infected or suspected to be infected with Cholera or Small-pox.

Emigrants.—All emigrant vessels were visited on arrival and kept under supervision while in port. The number of emigrants passing through the Tyne Port during 1893, was 1,015, and information concerning those disembarking and proceeding overland to other British Ports was forwarded to the Medical Officer of Health of those ports.

General Sanitary Work.—Of the 11,327 vessels inspected (8,222 British) 8,515 were in good sanitary condition, 987 passable, and 1,825 defective. The chief defects consisted of insufficient ventilation, and defective lighting, drainage, and water-closets.

Drinking Water.—31 water boats were examined and found in good condition. In 342 instances the drinking water of ships (221 from Cholera infected ports) was changed.

Disinfection.—42 vessels and several lots of clothing were disinfected during the year, 304 beds were burnt, and 40 lots of filthy bedding destroyed, owing to infection. 2 foul cattleships arrived in the Tyne during the year, against 10 in the previous year, and were cleansed under the supervision of the Inspector.

Cholera.—Included in the report is a special report on Cholera, from which it appears that the

stringent precautions adopted last year were again enforced. During August the two boarding Medical Officers were placed on continuous duty, and from the end of that month to the beginning of December 60 vessels were on the average medically inspected every week. 26 cases of Cholera or suspected Cholera were reported by vessels arriving in the Tyne as having occurred on board during the voyage, while 7 cases of suspected Cholera or Choleraic Diarrhœa were removed to the Floating Hospital for treatment, and the bodies of 2 persons who had died from Asiatic Cholera on their arrival in the Tyne were buried with every possible precaution in Jarrow Cemetery.

The tanks of 221 vessels laden with fresh water ballast taken in at an infected port were pumped out and disinfected. The report points out that there is no power to prevent the discharge into a dock or river of large quantities of fresh water ballast taken in at Cholera infected ports, though the danger is much greater than that from bilge water, which is prohibited by Local Government Board Order from being so discharged. On the advice of the Medical Officer of Health a disinfecting hulk was provided, and is being fitted up for disinfecting ships and their contents. The hulk will contain :—

1. A tank for Mercuric drench (Perchloride of Mercury).
2. A steam disinfecting chamber.
3. A storehouse for cylinders of liquified Sulphurous acid.

The report advocates that the expenses of Port Sanitary Authorities should be considered National expenses.

HARTLEPOOL PORT.

S. BIGGART, M.D., Medical Officer of Health.

Disease on Shipboard.—238 vessels were inspected by the Medical Officer of Health, 44 of which were reported to have seamen sick aboard, while 86 were from Cholera infected or suspected ports, 105 carried passengers and emigrants, and 3 were loaded with rags and disused clothing. Some of the latter were returned to the port of loading—Hamburg. 5 cases (4 of severe Diarrhœa and 1 of Small-pox) were removed to the Port Sanitary Hospital.

Drinking Water.—This was specially inquired into and all Captains who had taken in water at infected ports were advised to have it pumped out and the tanks refilled with pure water. Notices were served in connection with 16 vessels on account of foul and dirty receptacles and water. All bilge and ballast water taken in at infected ports was pumped out.

Emigrants.—During the greater part of the year the emigrant traffic to the port was stopped. The total number of passengers and emigrants for the year was 1,316 as compared with 5,654 in 1892. All were seen on arrival both by night and by day. The names and addresses were taken of all disembarking and at once forwarded to the sanitary officials at the different ports of re-embarkation.

Cholera.—The precautions against this disease mentioned in last year's Report were again stringently enforced, and from September to November an Assistant Inspector was appointed. No case of Cholera was introduced into the Port.

Vessels Inspected.—1,606 ships were visited and in 764 cases revisits were made, and 91 notices were served for sanitary defects, 85 of which were complied with before sailing.

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TABLE A.

TABLE GIVING POPULATION, BIRTH-RATE, DEATH-RATE, &C., WITHIN THE URBAN SANITARY DISTRICTS
OF THE ADMINISTRATIVE COUNTY OF DURHAM.

URBAN SANITARY DISTRICTS.	Medical Officer of Health.	Area.	Population (Estimated) 1883	Births.	Deaths.	Birth-rate.	Death-rate	Zymotic-rate.	Infant Mortality per 1000 Births.	Phthisis Death-rate.	Lung Diseases Death-rate.	Notification Act in operation?	Number of Cases Notified	Hospital accommodation?	Number of Cases removed to Hospital	Percentage of Notified Cases removed to Hospital.	REMARKS.
BOROUGHS.																	
Darlington ...	J. Lawrence, M.D. ...	3945	38500	1158	715	31·4	18·5	2·7	180	1·1	2·8	Yes.	295	Yes.	117	39·6	* Including 45 deaths not belonging to the district.
Durham ...	A. M. Vann, M.R.C.S. ...	880	14846	378	335*	25·4	22·5	1·2	166	1·7	5·2	Yes.	121	Ves.	14	11·5	* Including 30 deaths not belonging to the district, but excluding deaths in Workhouse and Fever Hospital.
Hartlepool ...	J. Rawlings, M.R.C.S. ...	552	22500	851	414*	37	18·4	1·8	133	1·1	3·5	Ves.	84	Yes.	7	8·3	* Excluding 4 deaths not belonging to the district.
Jarrow ...	G. W. Weir, M.D., D.P.H. ...	728	35860	1284	726*	35·8	20·2	5·2	150	2·1	3·3	Yes.	1353	Ves.	174	12·8	* Including 12 deaths not belonging to the district.
Stockton ...	J. H. Clegg, M.R.C.S. ...	2848	51000	1772	872*	34·7	17·0	1·9	153	1·8	2·6	Yes.	342	Yes.	88	25·7	Including 14 deaths not belonging to the district.
West Hartlepool ...	S. Gourley, M.D. ...	2454	46146	1667	854	35·9	18·3	4·3	183	1·08	3·9	Ves.	224	Yes.	33	14·7	
LOCAL BOARDS.																	
Barnard Castle ...	A. H. Sevier, M.B. ...	533	4341	116	112	26·7	25·8	2·3	181	2·0	2·7	Yes.	111	Yes.	1	0·9	Including 14 deaths not belonging to the district.
Bishop Auckland ...	T. A. McCullagh, L.R.C.P. ...	692	10500	403	240	38·3	22·8	4·4	161	1·0	3·5	No.	...	Ves.	3	..	Including 32 deaths in Workhouse, 13 of which belonged to the district.
Benfieldside ...	George Renton, M.D. ...	1525	6460	191	130	28·7	20·1	2·7	235	2·7	2·6	Yes since July.	68	Yes.	...	...
Blaydon ...	Philip Brown, M.D. ...	9349	14850	564	271	38·6	18·2	3·4	148	1·0	2·4	Yes since Nov.	76	Yes.	8	10·5	
Brandon & Byshottles	H. Smith, M.B. ...	6683	14971	534	251	35·6	16·8	4·7	194	1·4	3·7	Ves.	323	Yes.	93	28·7	
Consett ...	George Renton, M.D. ...	993	8460	305	168	36·2	19·8	4·3	177	3·0	4·0	Yes since July.	101	Yes.	14	13·8	
Felling ...	M. F. Kelly, L.F.P.S. ...	2684	18000	728	418	40·4	23·3	2·8	177	1·5	3·4	Yes since Sept.	?	No.	...	...
Hebburn ...	R. Mitchell, M.A., M.B. ...	1180	18000	682	314	37·8	17·4	3·8	158	1·6	2·9	Ves.	200	Yes.	36	18	
Houghton-le-Spring ...	D. S. Park, F.R.C.S. ...	1551	6578	257	165	39·1	25·1	6·1	252	1·2	5·4	Ves.	247	No.	4 to Workhouse	1·6	
Leadgate ...	George Renton, M.D. ...	1838	4560	179	83	39·3	18·2	2·4	184	0·8	2·6	Yes since April.	111	Yes.	41	36·9	
Ryton ...	Philip Brown, M.D. ...	5150	6000	208	98	34·6	16·3	2·5	154	1·0	2·6	Yes since Nov.	61	No.	...	...
Seaham Harbour ...	T. Gibbon, M.R.C.S. ...	1089	9370	414	216	44·1	23·0	2·9	147	1·8	4·6	Ves.	305	No.	...	...	* Including 4 deaths not belonging to the district.
Shildon & East Thirkley	S. Fielden, M.D. ...	1066	9795	355	257*	36·2	26·2	8·3	239	1·3	2·2	Yes.	...	Yes.	38	...	* Including 16 deaths in Workhouse belonging to the district.
Southwick ...	H. Liston, L.R.C.P. ...	845	10770	408	226*	37·8	20·9	4·5	174	1·6	3·3	No.	...	Yes.	...	...
Spennymoor ...	J. C. O'Hanlon, L.R.C.S.I. ...	168	6041	223	131	36·9	21·7	3·6	184	1·5	5·8	Yes.	171	No.	...	...	* Including 9 deaths in Workhouse not belonging to the district.
Stanhope ...	W. Robinson, M.D. ...	211	1864	55	37*	29·5	19·9	1·0	109	1·0	2·1	No.	...	No.	...	...
Stanley ...	T. Benson, L.R.C.P. ...	2006	8700	315	176	36·2	20·2	2·8	200	1·5	4·2	Yes.	46	Yes.	2	4·3	
Tow Law ...	James Wild, L.R.C.P. ...	470	4564	174	91	37·5	19·9	4·8	178	0·44	4·6	Yes.	52	No.	...	...
Whickham ...	A. W. Attwater, L.R.C.P. ...	5961	9600	329	158*	34·2	16·4	2·8	155	1·2	3·0	Yes since Dec.	47	No.	..	..	* Including 2 deaths not belonging to the district.
Willington ...	R. E. Brown, L.R.C.P. ...	3795	7940	285	166	35·8	20·9	3·5	221	0·6	4·1	Ves.	87	No.	...	...

TABLE A I.

ADMINISTRATIVE COUNTY OF DURHAM.

DEATHS AT CERTAIN AGES AND FROM CERTAIN SPECIFIED CAUSES.

URBAN SANITARY DISTRICT.	DEATHS AT SUBJOINED AGES.							DEATHS FROM SUBJOINED CAUSES.																		
	At all Ages.	Under 1 Year.	and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards	Small-pox.	Scarlet Fever.	Diphtheria.	Membranous Group.	Typhus	Enteric or Typhoid Contagious Purpura.	Cholera.	Erysipelas.	Measles.	Whooping Cough.	Diarrhoea and Dysentery.	Rheumatic Fever.	Phtisis.	Brachitis, Pleuritis, and Peritonitis.	Heart Disease.	Injuries.	All other Diseases.		
Darlington	715	209	93	41	30	205	137	...	2	2	3	...	17	...	3	...	12	11	44	3	45	108	58	16	389	
Durham	335	63	20	13	23	132	84	5	2	...	...	...	1	...	3	...	1	3	...	4	1	26	78	33	15	163
Hartlepool	414	114	86	7	28	115	64	...	3	...	...	...	2	2	...	...	4	...	2	33	2	24	79	22	21	220
Jarrow	726	193	182	47	44	199	61	..	15	6	11	..	18	..	2	..	2	73	24	41	5	76	121	27	11	294
Stockton	872	272	109	36	44	238	173	...	...	6	4	...	11	2	1	..	3	3	5	68	1	93	115	57	18	485
West Hartlepool	854	308	169	39	31	202	105	...	4	6	2	..	10	..	..	..	20	63	94	2	50	182	46	10	365	
Barnard Castle	112	21	9	2	9	35	36	1	..	..	..	..	1	..	..	1	2	..	6	1	9	12	21	2	56	
Bishop Auckland	240	65	33	18	12	63	49	...	..	1	1	..	17	2	1	..	4	4	17	2	11	37	13	4	126	
Benfieldside	130	45	25	5	10	27	18	..	..	2	1	..	2	..	1	..	1	2	4	7	1	18	17	11	1	62
Blaydon	271	84	38	17	36	46	50	10	6	2	2	..	7	..	..	3	1	1	2	18	1	15	37	24	10	132
Brandon & Byshottles	251	104	40	15	16	46	30	..	6	1	6	..	8	..	..	..	1	1	4	45	..	21	55	14	4	85
Consett	168	54	34	7	10	49	14	3	3	3	..	..	3	..	1	..	..	..	7	18	1	26	34	9	3	57
Felling	418	139	82	23	18	86	70	..	4	3	5	..	9	..	..	..	1	4	10	15	..	32	62	28	18	227
Hebburn	314	108	62	12	19	90	23	..	..	3	1	..	9	..	2	1	4	4	11	34	4	29	53	18	4	137
Houghton-le-Spring	165	65	20	11	9	26	34	..	7	..	..	..	8	..	..	2	..	3	5	14	..	8	32	5	4	77
Leadgate	83	33	6	3	4	28	9	4	..	4	..	..	1	..	..	..	..	..	..	2	..	4	12	7	1	48
Ryton	98	32	11	2	8	17	28	1	..	4	..	..	2	..	..	..	..	..	1	7	..	6	16	13	4	44
Seaham Harbour	216	61	38	17	16	43	41	..	2	..	2	..	8	1	..	..	1	7	..	10	..	18	40	15	7	105
Shildon & East Thickley	257	85	39	19	30	54	30	..	..	8	2	..	38	..	..	..	12	6	16	..	13	21	14	1	126	
Southwick	226	71	40	13	13	57	32	..	4	..	..	9	11	1	1	..	2	..	1	23	2	17	37	3	7	108
Spennymoor	131	41	21	7	6	35	21	..	..	4	3	..	5	..	..	..	..	..	10	..	9	35	12	1	52	
Stanhope	37	6	1	2	4	15	9	..	..	..	..	..	1	..	..	..	1	..	..	..	..	5	5	..	..	25
Stanley	176	63	34	9	13	38	19	..	2	..	..	..	..	..	..	..	1	10	10	3	1	13	37	8	4	87
Tow Law	91	31	11	4	4	27	14	..	5	2	3	1	2	1	2	..	..	2	3	..	2	21	9	..	35	
Whickham	158	51	30	10	6	28	33	..	5	1	3	..	1	..	..	..	..	7	10	1	12	29	11	12	66	
Willington	166	63	30	8	10	28	27	..	..	..	..	..	5	..	..	..	7	1	15	..	5	33	4	5	91	
TOTAL	7624	2381	1263	387	453	1929	1211	24	70	58	49	10	197	9	17	9	25	169	180	557	28	587	1308	482	183	3662

TABLE B.

TABLE GIVING POPULATION, BIRTH-RATE, DEATH-RATE, &c., WITHIN THE RURAL SANITARY DISTRICTS
OF THE ADMINISTRATIVE COUNTY OF DURHAM.

RURAL SAN'Y DIST	Medical Officer of Health.	Area.	Population 1893 (Estimated)	Births.	Deaths.	Birth-rate.	Death-rate.	Zymotic rate.	Infant Mortality per 1000 Births.	Phthisis Death-rate.	Lung Diseases Death-rate.	Notification Act in operation?	Number of Cases Notified	Hospital accommodation?	Number of Cases removed to Hospital	Percentage of Notified Cases removed to Hospital.	REMARKS.
Wicklow, Division I.	T. A. McCullagh, L.R.C.P.	... 19130	27514	1052	538	38·2	19·5	3·4	166	0·9	3·2	No.	...	No.	2*	...	*Removed to Auckland Urban Hospital.
Do., Division II.	G. W. Ellis, L.R.C.P.	... 43393	35960	1418	636	39·4	17·6	1·9	154	1·3	2·6	No.	...	No.	...	...
Chester-le-Street	D. Duncan, M.B., L.S.Sc.	... 34869	52250	2111	1090	40·4	20·8	4·7	177	1·2	2·9	Yes.	842	Yes.	33	3·9	
*Darlington ...	C. M. Hardy, M.B.	... 42034	9367	279	138	29·7	14·7	1·4	125	0·5	1·8	Yes.	51	Yes.	5	9·8	*Durham County portion only.
Durham, E. Division...	W. A. Hepburn, M.D.	... 15324	14789	574	330*	38·8	22·3	1·9	200	1·6	3·7	Yes.	91	Yes.	2	2·1	*Including 4 deaths not belonging to the district
Do., W. Division	E. Jepson, M.D.	... 17582	19159	672	314	34·8	16·3	2·7	178	1·2	2·6	Yes.	316	Yes.	13	4·1	
Easington ...	J. Arthur, L.R.C.P.	... 36942	41099	1673	923	40·7	22·4	4·9	185	1·3	2·9	Yes. since April	1140	Yes.	31	2·7	
Hartlepool ...	S. Gourley, M.D.	... 18368	2328	73	44*	31·8	18·8	4·7	109	0·8	2·1	Yes.	4	Yes.	1	25·0	*Exclusive of 43 deaths not belonging to the district.
Houghton, N. Division	D. S. Park, F.R.C.S.	... 8399	13541	538	311*	39·7	22·9	3·7	215	1·1	3·6	Yes.	379	Yes.	15	3·9	*Including 2 deaths in Workhouse belonging to the district
Do., S. Division	J. R. Sutherland, L.R.C.S.	... 6409	18900	767	429*	40·5	22·7	4·07	199	1·4	3·4	Yes.	304	Yes.	1	0·3	Including 7 deaths in Workhouse belonging to the district.
Lanchester, (Medomsley Division)	W. T. Bolton, L.R.C.P.	... 21213	7435	256	113	34·4	15·1	1·6	93	1·7	2·0	Yes.	103	Yes.	5	4·8	
Lanchester, (Lanchester Division)	J. Wilson, M.D.	... 29956	16419	647	330*	39·4	20·0	3·5	126	1·2	5·0	Yes.	362	Yes.	2	0·5	*Including 23 deaths in Workhouse.
Lanchester, (Stanley Division)	T. Benson, L.R.C.P.	... 9543	15000	597	323	39·8	21·5	3·1	194	1·2	3·2	Yes.	254	Yes.	...	..
Sedgefield ...	G. R. Sheraton, L.R.C.P.	... 45243	18640	717	374*	38·3	20·1	3·2	189	1·5	2·5	Yes. since May.	233	No.	...	...	*Exclusive of 160 deaths in County Asylum.
South Shields...	J. Grant, M.D.	... 12409	12382	461	269	37·2	21·7	5·1	171	2·3	3·0	Yes.	183	Yes.	10	5·4	
Stockton ...	J. W. Blandford, L.R.C.P.	... 34228	12765	382	181	29·9	14·1	2·6	99	0·7	1·7	Yes.	91	Yes.	9	9·8	
Sunderland ...	T. C. Squance, M.D., D.P.H.	... 7404	18244	750	417	41·1	22·8	3·8	176	1·3	3·7	Yes.	297	Yes.*	2	0·6	*At present no Hospital accommodation.
Teesdale, (Middleton Division)	J. Atkinson, L.R.C.P.	... 40897	3804	120	73	31·5	19·4	0·78	116	1·0	3·4	No.	...	No.	...	...
Teesdale, (Barnard Castle Div.)	A. H. Sevier, M.B.	... 13636	1004	18	13	18·0	13·0	Nil.	166	1·0	3·0	No.	...	No.	...	...
Teesdale, (Staindrop Division)	James Beattie, L.R.C.P.	... 25494	6202	245	102	39·5	16·4	1·1	151	0·4	1·7	No.	...	No.	...	...
Weardale, (St. John's Division)	C. C. Hlewiton, M.R.C.S.	... 36096	3420	75	54	21·9	15·7	0·8	93	3·2	2·3	No.	...	No.	...	...
Weardale, (Wolsingham Div.)	T. V. Devey, L.R.C.P.	... 24036	3235	106	52*	32·7	16·0	0·9	94	0·7	3·1	No.	...	No.	...	..	*Including 4 deaths not belonging to the district
Weardale, (Stanhope Division)	W. Robinson, M.D.	... 24527	2657	79	41*	29·7	15·4	1·1	164	1·5	2·2	No.	...	No.	...	...	*Including 2 deaths not belonging to the district.
Weardale, (Derwent Division)	C. J. Connor, M.B.	... 13144	523	13	2	24·8	3·8	Nil.	Nil.	Nil.	3·8	No.	...	No.	...	...

The Statistics of Tables A and B do not include 160 deaths occurring in Sedgefield Asylum, nor 43 deaths occurring in the Hartlepool Workhouse and Port Sanitary Hospital.

TABLE B I.

ADMINISTRATIVE COUNTY OF DURHAM.

DEATHS AT CERTAIN AGES AND FROM CERTAIN SPECIFIED CAUSES.

RURAL SANITARY DISTRICT.	DEATHS AT SUBJOINED AGES.							DEATHS FROM SUBJOINED CAUSES.																			
	At all Ages.	Under 1 Year.	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards	Small-pox.	Scarlet Fever.	Diphtheria.	Membranous Group.	Typhus	Enteric or Typhoid	Fever.	Con-tinued.	Puerperal.	Cholera.	Erysipels.	Menses.	Whooping Cough	Diarrhoea and Dysentery.	Rheumatic Fever.	Phtisis.	Bronchitis, Pneumonia, and Pleurisy	Heart Disease.	Injuries.	All other Diseases.
Auckland, Division I...	538	175	82	37	32	102	110	...	5	17	2	...	17	...	1	...	1	10	6	37	1	27	88	24	14	288	
Do. Division II.	636	209	81	25	33	183	105	...	6	6	4	...	11	...	3	...	1	4	7	26	...	49	96	47	21	355	
Chester-le-Street ...	1090	375	162	68	69	253	163	5	12	13	4	...	37	1	6	...	2	17	16	145	3	66	155	76	35	497	
Darlington ...	138	35	7	7	6	36	47	...	...	...	3	...	3	...	...	...	...	1	...	7	...	5	17	17	5	80
Durham, E. Division...	330	115	52	11	15	72	65	...	2	1	...	...	2	...	4	...	...	2	10	11	3	24	55	21	9	186
Do. W. Division...	314	119	44	16	17	73	45	1	6	2	6	...	6	...	...	...	...	6	...	25	7	23	51	12	10	159
Easington ..	923	311	193	68	60	184	107	1	27	15	5	5	42	7	11	...	4	22	6	75	4	54	121	39	31	454	
Hartlepool ...	44	8	5	3	5	12	11	...	...	...	...	3	...	...	...	...	...	...	8	...	2	5	2	3	21	
Houghton, N. Division	311	116	42	20	23	52	58	..	2	8	...	...	23	1	1	...	...	5	2	10	...	15	49	7	8	180
Do. S. Division	429	153	89	14	21	66	89	..	8	1	2	...	13	...	...	1	2	17	3	32	...	26	67	17	9	231
Lanchester (Medomesley Division)	113	24	20	5	9	40	15	...	...	...	...	3	...	1	1	...	...	3	5	...	13	15	3	5	64	
Lanchester (Lanchester Division)	330	82	60	16	31	62	79	...	10	3	9	...	15	...	2	...	4	1	1	20	4	20	83	15	...	143	
Lanchester (Stanley Division) ...	323	116	50	15	11	80	51	...	4	10	2	...	4	...	1	...	...	3	4	24	3	18	49	16	14	171
Sedgefield ...	374	135	60	20	24	78	57	...	3	6	...	...	11	...	5	...	...	5	5	28	1	29	46	14	12	209
South Shields...	269	79	48	17	20	71	34	7	2	...	20	2	8	4	23	1	29	38	20	17	98
Stockton ...	181	38	22	7	26	54	34	...	...	4	1	...	8	...	1	...	1	6	2	13	...	9	22	11	7	96
Sunderland ...	417	132	79	25	25	88	68	...	7	...	1	1	12	3	1	...	1	3	4	40	2	24	69	11	14	224	
Teesdale (Middleton Division)	73	14	3	1	2	20	33	...	...	...	...	1	...	...	...	...	2	...	...	...	4	13	10	1	42	
Teesdale (Barnard Castle Div.)	13	3	1	...	2	3	4	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	2	1	6	
Teesdale (Staindrop Division)	102	37	10	4	2	24	25	...	...	3	...	...	...	...	...	...	1	...	5	...	3	11	3	2	76	
Weardale (St. John's Division)	54	7	1	1	4	26	15	...	1	...	...	...	2	...	...	...	...	1	...	11	8	8	1	22		
Weardale (Wolsingham Division)	52	10	6	7	4	11	14	...	...	...	...	1	...	...	1	2	...	...	2	10	6	3	27			
Weardale (Stanhope Division)	41	13	6	1	2	11	8	...	...	4	...	...	...	...	...	...	...	2	...	4	6	4	3	18		
Weardale (Derwent Division)...	2	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Deaths in County Asylum (166) and in Hartlepool Workhouse and Port Hos- pital (43) not accounted for in Sanitary Districts...	203	5	1	2	3	136	51	...	...	...	...	1	...	...	1	...	1	2	...	35	35	17	2	109		
TOTAL ...	7300	2313	1124	387	451	1737	1290	14	93	87	45	6	235	12	37	2	20	115	74	539	29	493	1114	402	227	3756	

TABLE C.

VITAL STATISTICS OF THE ADMINISTRATIVE COUNTY OF DURHAM.

1893.

SANITARY DISTRICTS.	Population. (Estimated 1893)	Births.	Deaths.	Zymotic Deaths.	Birth-rate.	Death-rate.	Zymotic-rate.	Deaths under 1 year per 1000 Births	Phthisis Death-rate	Bronchitis, Pneumonia & Pleurisy Death-rate	Cases removed to Hospital.	Percentage of Uncertified Deaths to Total Deaths
BOROUGHS (6).	209310	7110	3916	634	33·9	18·7	3·02	163	1·5	3·2	433	1·7
LOCAL BOARDS (20).	179681	6725	3708	698	37·4	20·6	3·8	181	1·5	3·4	240	5·3
RURAL DISTRICTS* (24).	355158	13623	7300	1222	38·3	20·5	3·4	169	1·3	3·1	131	5·7
ADMINISTRATIVE COUNTY ...	744149	27458	14924	2554	36·8	20·0	3·4	170	1·4	3·2	804	4·6
ENGLAND AND WALES ...	2973100	914305	569997	73449	30·8	19·2	2·47	159	...	...	...	2·7

* Including 203 deaths in Sedgefield Asylum (160) and the Hartlepool Workhouse and Port Fever Hospital (43) which have not been allocated to their proper Sanitary Districts.



TABLE D.

INSPECTORS' REPORTS-URBAN.

TABLE E.

INSPECTORS' REPORTS-RURAL.

